World Bank Group
Forest Action Plan FY16–20

The WBG Contribution to the Forest Agenda

April 6, 2016

Foreword

The World Bank Group aims to end extreme poverty and boost shared prosperity in a sustainable manner. The thoughtful management of the world's remaining forests and trees is critical to achieving these goals.

As the world warms and its population grows, forests and trees stand at the intersection of many decisive challenges: sustaining agriculture; reducing the impact of droughts, floods, and storms; regulating water and climate; protecting infrastructure; providing timber, paper, and energy; and housing critical biodiversity. Forests are also where some of the world's most vulnerable people live. Actions taken to enhance the governance and sustainable management of forests contribute directly to developing economic opportunities for the poorest.

Forests are however under significant threat. Increasing demands for food, fiber, fuel, and minerals often drive large-scale land use changes at the cost of forest and tree cover. Unless these competing land uses are understood and comprehensively managed, economic loss, irreversible environmental degradation, and loss of social cohesion may ensue. Rising temperatures and increasingly unpredictable precipitation patterns pose an additional threat to the stability of forests already affected by disease and more frequent fires.

At the World Bank Group, we recognize the importance of forests to sustainable and inclusive development and support renewed public and private sector efforts to address the global forest challenge.

This *Forest Action Plan FY16–20* aims to integrate the sustainable management of forests more fully into the development mosaic and define priorities for the World Bank Group (WBG) for the next five years. It builds on the Forest Strategy of 2002 and identifies two focus areas of engagement: sustainable forestry, where we aim to have investments contributing to sustainable management of forests and value chains, and forest-smart interventions, where we aim to ensure that our work in other sectors does not come at the expense of forest capital, while also strengthening the foundations for positive forest outcomes.

This *Action Plan* is part of an encouraging trend. Globally, governments and citizens, utilities, and private companies are increasingly aware of the impacts of forest loss on their economies, well-being, productivity, and supply chains—and are showing greater willingness to change business as usual. Building on inputs received from various stakeholders, the Action Plan defines the WBG contribution to the global forest agenda.

Several recent international processes and partnerships have led to an unprecedented engagement of public and private actors in support of reducing deforestation and forest degradation, restoring degraded land, and increasing forest cover. The Bonn Challenge, launched in 2011, proposes to restore 150 million hectares of the world's deforested and degraded lands by 2020; the Tropical Forest Alliance, a global public-private partnership founded in 2012, encourages partners to reduce tropical deforestation in the sourcing of commodities such as palm oil, soy, beef, and pulp and paper; and the 2014 New York Declaration on Forests issued a widely backed call to cut natural forest loss in half by 2020 and end it by 2030. Forests feature prominently in the Sustainable Development Goals universally endorsed in 2015—Goal 15, in particular, aims to conserve and restore terrestrial ecosystems through actions that include halting deforestation and restoring degraded forests. The Paris Agreement on climate change strongly encourages parties to take action and support activities that reduce emissions from deforestation and forest degradation through results-based

payments and other sustainable forest management approaches; and more than 90 countries identified the need to address forest and land use changes in their Nationally Determined Contributions to address climate change.

This *Forest Action Plan FY16-20* will guide our engagement as we partner with the public and private sector to make these aspirations a reality.

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All dollar amounts are U.S. dollars.

List of Acronyms

To be added

Executive Summary

The *Forest Action Plan FY16–20* (FAP) confirms the aim of the World Bank Group (WBG) to strengthen the role of forests in achieving the WBG goals of ending extreme poverty and increasing shared prosperity in a sustainable manner by 2030. The FAP seeks to support countries willing to fully embed forests in their development priorities, by focusing more deliberately on the positive contributions that forests make to poverty reduction, food security, economic development and climate action agenda. It comes at a time of stepped up forest ambitions in key documents ranging from the Sustainable Development Goals, to the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC), which highlights the key contribution of forests to the climate challenge.

The FAP builds on the 2002 WBG strategy, *Sustaining Forests: A Development Strategy,* which continues to provide the overall framework for WBG engagement in forests, as well as a detailed analysis of the emerging demands coming from client countries. It follows a review of the implementation of the Forest Strategy that was conducted by the Independent Evaluation Group (IEG) in 2012–13[1] and a proposal by WBG management, endorsed by the Committee on Development Effectiveness, to prepare a Forest Action Plan that would address some of the weaknesses identified in the IEG review.

The FAP articulates the WBG's value proposition on forests for the next five years and identifies key action areas for WBG engagement: it brings new knowledge, technology, and capacity for collaboration across sectors together for renewed impact through sustainable forestry investments and forest-smart operations outside the forest sector. Through the implementation of the FAP, which is in line with the Climate Change Action Plan (CCAP), the WBG will aim to support client countries' efforts to implement priority actions linked to forests and other land uses identified in their Nationally Determined Contributions (NDC) to combat climate change and its impacts.

The Contribution of Forests to Sustainable Development

Up to one-fifth of the global population—1.3 billion people—derives direct and indirect benefits from forests in the form of employment, forest products, and contributions to livelihoods and incomes. Rural households living near forests obtain about 22 percent of their income from timber and non-timber sources. An estimated nine percent of rural populations—11 percent in Africa—are lifted above the extreme poverty line with income from forest resources. Forests also provide a crucial safety net for rural people in times of economic distress, helping them bolster their income to offset losses in agricultural income due to weather shocks, crop failure, or changes in commodity prices. They also contribute to food security and health by supplementing food diet as well as providing woodfuel to cook and sterilize food for about 2.4 billion people.

The formal timber sector contributes $600 billion to the global economy (about 1 percent of GDP). It is estimated that more than 50 million people derive jobs from timber activities. Forests also make a vital contribution to the overall economy through the generation of essential services that sustain key sectors (agricultural, energy, water, mining, transport), and rural and urban areas by maintaining the fertility of the soil, protecting watersheds, providing habitat for biodiversity, and reducing the risk of natural disasters (such as floods and landslides). However, the economic role of forests is broadly underestimated, in part because much of the forest-related economic activity takes place in the informal sector and much of the income from

[1] IEG, 2013.

forests is non-cash—food, fodder, energy, house-building materials, and medicine. In addition, the value of the services delivered by forests and trees has long been overlooked because it could not be monetized.

Globally, forests remain under significant threat, despite the growing recognition of the decisive role they play in socioeconomic growth and in lifting people out of poverty while providing critical services for long-term natural resource sustainability. Although the pace of global deforestation has slowed since the 1990s, it still affects an area larger than Costa Rica each year. Deforestation and forest degradation contributed about 15 percent of the world's greenhouse gas emissions, the third largest source after coal and oil, over the 2005–2010 period. Pressures on forests are likely to continue for the next several decades. Population growth—along with rapid urbanization and changes in consumption patterns in middle-income countries—is expected to sharply increase the demand for food, fiber, energy, and minerals that often drive large-scale land use changes at the cost of forest and tree cover.

Threats to forests are manifold and often interdependent, hence addressing them requires the recognition of the real economic contribution of forests as well as a coordinated multi-sectoral perspective—a "landscape approach," that provides the organizing principle for investing in and managing land, water, and forest resources based on rational spatial planning and socioeconomic considerations. Such an approach ensures activities in other sectors such as agriculture, transport, mining, or hydropower are undertaken in ways that limit impacts on forest integrity at the same time they maximize development benefits. To address the global forest challenge, forests would need to become an integral part of national development agendas. For that to happen, they would need to be recognized for the many opportunities they offer instead of only the challenges and risk associated with their management.

Sustainable forest management also calls for enhancing community involvement in decision-making processes related to the use of forests, increasing investments in planted forests, working in partnership with the private sector to make their business models forest-smart, and strengthening forest governance to foster responsible investments and combat illegal logging. Some two billion hectares of lost or degraded forests and landscapes could be restored, yielding tremendous benefits in terms of economic opportunities, while sequestering a significant quantity of carbon from the atmosphere. As highlighted by more than 90 countries in their NDCs, forests and land use are an integral part of the solution to climate change, contributing to both the mitigation and the adaptation agendas.

The *Forest Action Plan FY16–20*: The WBG Contribution to the Forest Agenda

Building on the 2002 Forest Strategy, the FAP identifies two focus areas for the WBG engagement for the next five years: (i) **Sustainable Forestry**, where we aim to have investments contributing to sustainable management of forests and value chains and (ii) **Forest-Smart Interventions**, where we aim to have interventions in other sectors not come at the expense of the forest capital. These two focus areas build on three cross-cutting themes that aim to improve the enabling environment and strengthen the foundations for positive forest outcomes: climate change and resilience, rights and participation; and institutions and governance. The following table outlines why the WBG prioritized the two focus areas and three cross-cutting themes and how it will deliver on them.

Tap the potential of forests and trees to contribute to the WBG goals of ending extreme poverty and boosting shared prosperity in a sustainable manner

Rationale for WBG Engagement	WBG Approach
Focus Area 1: Sustainable Forestry	
In many developing countries, forests support the livelihoods of hundreds of millions of people, mostly the poor and vulnerable, who are remote from market opportunities. Beyond sustaining livelihoods, sustainably managed forests also offer opportunities to lift people out of poverty where alternatives do not exist. Even in the most advanced economies, some pockets of poverty remain in forested areas. At the same time, population growth and associated changes in consumption patterns are increasing demand for forest products (wood-based energy, construction, poles, etc.) and placing more pressure on natural forests. Responding to the growing demand while preserving natural forests is an enormous challenge.	The FAP aims to ensure that investments in the forestry sector protect and optimize the use of forests (both natural and planted) to sustain livelihoods and create jobs and economic opportunities in rural areas. Together, the entities of the WBG are able to foster wealth generation and employment opportunities along forest-sector value chains: the World Bank can help establish investment environments conducive to small and medium forest enterprises as well as large-scale investors; the International Finance Corporation (IFC) can partner with responsible private sector investors to expand investment in plantations, enterprises, and value chains; and the Multilateral Investment Guarantee Agency (MIGA) can mitigate potential risks associated with investments in the forestry sector.
Potential Interventions under Focus Area 1	
Protect and Optimize the Management of Natural Forests, through: - Participatory Forest Management - Sustainable Management of Production Forests - Sustainable Production of Non-Timber Forest Products - Forest Biodiversity Protection - Nature-based Tourism - Payment for Ecosystem Services	Encourage Sustainable Plantations and Tree Planting, through: - Responsible Investments in Large-scale Commercial Reforestation - Smallholder Plantations and Tree Planting Support Sustainable Forest Value Chains, through: - Small and Medium Forest Enterprises - Private Investments in Forest Value Chains
Focus Area 2: Forest-Smart Interventions in Other Economic Sectors	
Increasing demands for food, fiber, fuel, and minerals often drive large-scale land use changes at the cost of forest and tree cover. Addressing pressures on forests requires an integrated perspective, an "integrated landscape approach," which provides the organizing principle for investing in and managing land, based on rational spatial planning and socioeconomic considerations. Forests and trees can also sustain, through the provision of ecosystem services, economic sectors such as agriculture, energy, and transport. For such an approach to work, decisions on development trajectories need to be informed by comprehensive, *ex-ante*, and robust information on potential trade-offs for forests, as well as opportunities for restoration.	The WBG aims to promote interventions in other sectors (such as agriculture, hydropower, extractives, and transport) that are "forest-smart" and that consider avoiding or minimizing their potential adverse impact on forests. To do so, the WBG will aim to support clients to promote growth that does not come at the expense of their natural assets, particularly forests, and that properly values and recognizes the contribution of forest services to economies. The WBG organizational structure, based on sectoral Global Practices and Cross-Cutting Solution Areas, can enable effective delivery of multi-sectoral solutions tailored to country-specific needs.

Potential Interventions under Focus Area 2	
Support Informed Decision Making on Land Uses by: - Introducing forest considerations as a key element of the Sustainable Development Agenda - Promoting land-use planning as a key tool for that purpose	Deliver on Forest-Smart Operations in Sectors, such as: - Agriculture and Water - Infrastructure (Transport, Dams and Hydropower, etc.) - Energy - Extractive Industries
Cross-Cutting Themes: Climate Change and Resilience, Rights and Participation, Institutions and Governance	
Climate Change and Resilience Forests and their biodiversity play a crucial role in sustaining the planet's balance. Forests are uniquely placed in the climate change agenda as they can deliver on both mitigation and adaptation agendas: they have the capacity to store and sequester carbon as well as to provide ecosystem services that enhance the resilience of natural systems.	Through the climate change trust funds (TFs) -Forest Carbon Partnership Facility, Forest Investment Program, and BioCarbon Fund-, the WBG will continue working on innovative solutions for forest-based mitigation to climate change. Additionally, more focus will be given to forests' contribution to the adaptation agenda and their contribution to resilient ecosystems: through the landscape approach, the WBG will contribute to enhanced resilience of rural economies and societies, in particular to climate shocks.
Rights and Participation Clarification of rights related to access to forest and use of forest products is critical, and yet the world's most carbon-rich and biodiverse forests are often found in regions where ownership is ill defined, contested, or insecure.	The World Bank will support clients willing to clarify forest access and user rights, improve land tenure (with a special focus on the rights and roles of indigenous peoples and forest-dependent communities), and modernize land administration systems. In addition, the WBG has established strong platforms that foster enhanced participation of various stakeholders.
Institutions and Governance Good forest governance and strong institutions are core conditions for sustainably managed forests so that current and future generations can benefit from forests in the long term.	The WBG will support its clients willing to strengthen their institutional capacity and adjust their policy/regulatory framework to sustainably manage their forests and the interfaces with other economic sectors. Use of new technologies will be promoted. The WBG can help countries tackle the pernicious and widespread effects of illegal logging.

Implementation of the Forest Action Plan

The FAP spells out implementation modalities that will help strengthen the WBG's ability to deliver on the forest agenda during the next five years.

Upstream assessments. The WBG will aim to have investments made in other sectors carried out in a "forest-smart" way, such that they do not come at the expense of forests. To do this, interventions in forests and other economic sectors will be guided by comprehensive, *ex-ante*, and robust information on potential trade-offs for forests as well as opportunities for restoration. The Systematic Country Diagnostic (SCD) and Country Partnership Framework (CPF) instruments offer ideal platforms to identify the challenges and opportunities related to forests in a strategic and integrated manner by initiating upstream dialogues on forests within the WBG and with client countries. To do this, *Country Forest Notes* (and subnational Notes as appropriate) will be prepared for priority countries (with forest-related Trust Funds as well as through Bank budget when

available) and will present an upstream analysis of threats to forests in individual countries or regions, as well as opportunities for socioeconomic growth in the forest sector. The notes will aim to inform SCDs and CPFs. These notes will also reflect priority actions presented by countries in their Nationally Determined Contributions to the Climate Convention.

Programmatic approach. The operational centerpiece of the FAP is a new business model that moves away from the instrument-driven approach that has shaped the WBG forest portfolio over the past few years to a more programmatic approach that strategically positions the WBG to support countries willing to pursue a forest-smart development trajectory. The approach will support an integrated development model that advances socioeconomic opportunities and needs without jeopardizing the health of forests. It is based on four features: a country-owned program, an appropriate mix of financial instruments, a cohesive financial architecture, and a long-term engagement.

This new business model responds to concerns raised about the proliferation of small-scale operations. The programmatic approach seeks to achieve greater strategic coherence in forest related interventions and simplifies how a country accesses various sources of funding for the sustainable management of its forest landscapes. A programmatic approach will take into account the specific challenges and opportunities a country has identified regarding forests and their contributions to the national economy and global public goods. It will support country-owned strategies that seek synergies and minimize trade-offs between interacting land uses (including agriculture, energy, transportation, extractives, ecosystem services, and biodiversity). Such an ambitious undertaking will be piloted in selected countries where the World Bank already has a significant involvement in the forest sector and sectors affecting forests, and where there is a significant commitment from the government and other stakeholders to go beyond business as usual.

Results and impacts. Strengthening the monitoring and reporting of the performance of the WBG forestry portfolio will help build a strong evidence base on results from investments. The FAP supports actions at two levels: (i) improve the capacity of the WBG to monitor progress toward achieving results, report on these, and evaluate impacts of forest-relevant interventions and, (ii) support client countries' efforts in building robust systems to monitor and report on the status of their forests.

Knowledge base. Knowledge generation (through analytical work and operations) and dissemination will be a key focus area. The portfolio of analytical and knowledge work, funded by trust funds of the Bank, will be aligned with the focus areas identified in the FAP. Through project cycle, performance and learning reviews of forest-related interventions, an operational knowledge base will be developed. This will be systematically captured and disseminated so that it can inform project/program design, and help determine midcourse corrections if appropriate. Trust fund resources will also support the consolidation of a knowledge management system.

Institutional and operational arrangements. The programmatic approach proposed under the FAP will aim to move away from the project-by-project and instrument-driven approach that has shaped the forest portfolio over the past few years to a more programmatic approach that would strategically position the WBG to support countries delivering on forest-smart interventions. Building on lessons learnt from the Finance & Markets Global Practice that has pioneered this approach over the past few years, the programmatic approach will seek to consolidate and streamline the preparation and implementation processes of different operations under the same program. This will aim for a stronger collaboration across Global Practices and Cross-Cutting Solutions Areas, with a focus on working as one team within the WBG. The WBG will also

work with partners and donors to improve the effectiveness of forest climate funds, to reduce transaction costs and increase impact.

Partnerships. The WBG works with a wide range of stakeholders and partners at the country, regional and global levels. To support its new business model, the WBG will place special emphasis on partnerships that can deliver operational support to client countries through coordinated efforts. Platforms established under the FCPF and the FIP (and its associated Dedicated Grant Mechanism for Indigenous Peoples and Local Communities) have deepened the Bank's engagement with a variety of stakeholders involved in the forest sector. Continuing dialogue and exchange with civil society and other groups will remain central to the implementation of the FAP.

INTRODUCTION: Why a Forest Action Plan?

The WBG Forest Strategy, *Sustaining Forests: A Development Strategy* continues to frame the institution's work in the forest sector. Adopted in 2002, the Strategy was prepared at a time when the Bank was seeking to re-engage more broadly and proactively in support of forests after a decade of relative inactivity, when little attention was paid to the active management of natural forests.[2]

The 2002 Strategy is organized around three main pillars. Bank support should (1)harness the potential of forests to reduce poverty in a sustainable manner, (2) integrate forests effectively into sustainable economic development, and (3) protect the vital local and global environmental services and values of forests. The overall framework for Bank action outlined in the Strategy has been very robust, and there is a consensus across a diverse group of stakeholders that the broad parameters described there continue to have great relevance and provide the flexibility to respond to emerging challenges.

For example, the Bank's support for work on forest carbon, while not explicitly addressed in the 2002 Strategy in any depth, has been entirely consistent with its focus on developing partnerships and protecting global services and values of forests.

A review of the implementation of the Strategy was conducted by the Independent Evaluation Group (IEG) in 2012–13.[3] While confirming that the 2002 WBG Forest Strategy was still relevant and well aligned with the Bank's mission and comparative advantage, IEG identified a few areas of weaknesses in implementation, in particular in terms of the impact on poverty alleviation of WBG interventions and the reporting on results from investments at a strategic level.

In February 2013, the Committee on Development Effectiveness (CODE) of the WBG welcomed the recommendations from the IEG review. It expressed strong and unambiguous support for continued WBG engagement in the forest sector and confirmed that the WBG has a unique and key role to play in promoting effective sustainable forest management in client countries, including timber concession reform. CODE supported the proposal of the WBG to prepare a Forest Action Plan building on the 2002 Forest Strategy and taking into account the IEG recommendations to strengthen the impact of the WBG forest interventions. Specifically, the Committee urged the WBG to strengthen the focus on poverty reduction targets, in particular through the development of short-term proxy indicators for long-term impacts and improved monitoring and evaluation frameworks, and to address how forest support can be integrated into wider smart land use policies.

In light of the guidance from CODE, the FAP describes the framework for WBG support to the forest sector, and to sectors affecting forests, for the next five years. It builds on two focus areas (i) Sustainable Forestry, where we aim to have investments related to forests contributing to sustainable management of forests and value chains and (ii) Forest-Smart Interventions, where we aim to have interventions in other sectors not come at the expense of the forest capital. It describes how the WBG will aim to create resilient and sustainable forest landscapes. The FAP builds on the priorities for supporting inclusive and green growth that are outlined

[2] In 1991, the scope of what the WBG could support was greatly restricted, including among other things a ban on any support to commercial logging in tropical forests. Despite the very significant latitude for forests sector investment that remained, the 1991 policy had a chilling effect on Bank lending, accompanied by progressive disengagement.
[3] IEG, 2013.

in the WBG's *Environment Strategy 2012–2022, Toward a Green, Clean and Resilient World for Al* and is fully aligned with the WBG Climate Change Action Plan.

The FAP also supports the global forest agenda, such as the newly adopted 2030 Sustainable Development Agenda (and the associated Sustainable Development Goals); the Paris Agreement under the United Nations Framework Convention on Climate Change (UNFCCC), which highlights the key contribution of forests to the climate challenge); the Bonn Challenge; and the May 2015 Ministerial Declaration of the United Nations Forum on Forests, which highlights "how sustainable forest management (SFM) is vital to transformative change and to addressing development challenges—from poverty eradication and economic growth to food security and climate change mitigation and adaptation."

The new institutional organization of the WBG introduced in July 2014 with 14 Global Practices (GP) and five Cross Cutting Solution Areas (CCSA) aims to enhance the institution's ability to respond to emerging challenges in client countries. In that context, the Environment and Natural Resources GP was tasked to lead the work on forests (including development of this Action Plan): it works closely with other GPs and CCSAs) and in coordination with respective country management units (CMUs) to promote the forest agenda. In addition, the close collaboration with the International Finance Corporation (IFC), and with the Multilateral Investment Guarantee Agency (MIGA) provides opportunities to encourage the private sector (ranging from small and medium enterprises to larger companies and financial intermediaries) to invest in a forest-smart way.

The FAP was developed through a joint effort involving all World Bank Global Practices and Cross-Cutting Solution Areas as well as the IFC and MIGA. The content and thrust of the draft FAP was discussed with external stakeholder groups to get their views and comments on the proposed actions. To that end, the WBG engaged, among others, the observers to the governing bodies of the Forest Investment Program and the Forest Carbon Partnership Facility, as well as other nongovernmental organizations and a number of governments.

CHAPTER 1. Forests' Contribution to Sustainable Development

Chapter Summary

This chapter describes the role forests play in contributing to the WBG goals of ending extreme poverty and increasing shared prosperity in a sustainable manner by 2030. It also provides an overview of the challenges and opportunities for the forest sector today, including climate change, competing uses of land, growing demand for forest products, land rights, financing, and forest governance.

Forests sustain livelihoods of millions of people, provide a promising pathway out of poverty, and contribute significantly to national economies. Forests also offer essential ecosystem services that support various economic sectors and contribute to ecological resilience and stabilization of the global climate system. Globally, however, the extent of forests continues to decline.

While forests still face major challenges, opportunities have emerged that could transform the way forests are managed. Forests have a unique role to play in combatting climate change, as they contribute simultaneously to mitigation and adaption agendas: they can help build productive and resilient landscapes while removing atmospheric carbon and other greenhouse gases (GHGs). Concerted action is needed if society is to make long-lasting use of global forest resources for poverty eradication and sustainable economic development and to protect the global forest estate for future generations.

I. Forests and the World Bank Goals

Forests and trees provide vital resources and ecosystem services for all of humanity through the regulation of climate and hydrological systems. The number of people deriving direct and indirect benefits from forests—in the form of employment, forest products, and contributions to livelihoods and incomes—is estimated at 1.3 billion (FAO 2014). If sustainably managed, forests and trees can contribute to long-term economic growth, social inclusion, and environmental stability. As such, forests are essential to achieving the WBG goals of ending extreme poverty and promoting shared prosperity in a sustainable manner and to the broader 2030 sustainable development agenda set out in the Sustainable Development Goals.

1.1. Forests Provide Pathways Out of Poverty

Some 300–350 million people, about half of whom are indigenous, who live within or close to dense forests depend almost entirely on forests for subsistence (Chao 2012). Hundreds of millions more, including people in cities, depend on forest resources for food, construction materials, and energy sources[4].

Beyond subsistence, forests are an important aspect of rural livelihoods. In Tunisia, a study shows that the 14% of the country's population living in rural areas derive 30 to 40% of their income from forests and rangelands (Croitoru and al., 2015). The recently completed Poverty and Environment Network (PEN) survey documented that rural households living near forested areas derive 22 percent of their income from forest

[4] Conventional biofuels (firewood, charcoal, crop residues and cattle dung) represent the main source of energy for about 2.4 billion households in southern countries. Firewood represent the most important rural domestic fuel. In large part of sub-Saharan Africa, they represent about 90 per cent of the rural energy supply and 70 to 80 per cent in China (IUFRO, 2015 and IEA, 2006)

sources.[5] This contribution is larger than wage labor, livestock, self-owned businesses, or any other category aside from crops. About half of the income from forests is non-cash and includes food, fodder, energy, house-building materials, and medicine (see Figure 1). This non-cash contribution, or "hidden harvest," is especially important for the extreme poor. The dependence of the poor on forests is further increased by their limited access to markets, as many live in remote areas. While the relative share of income from forests decreases for the upper quintile of a population, the consumption of forest products increases in absolute terms (Angelsen et al. 2014).

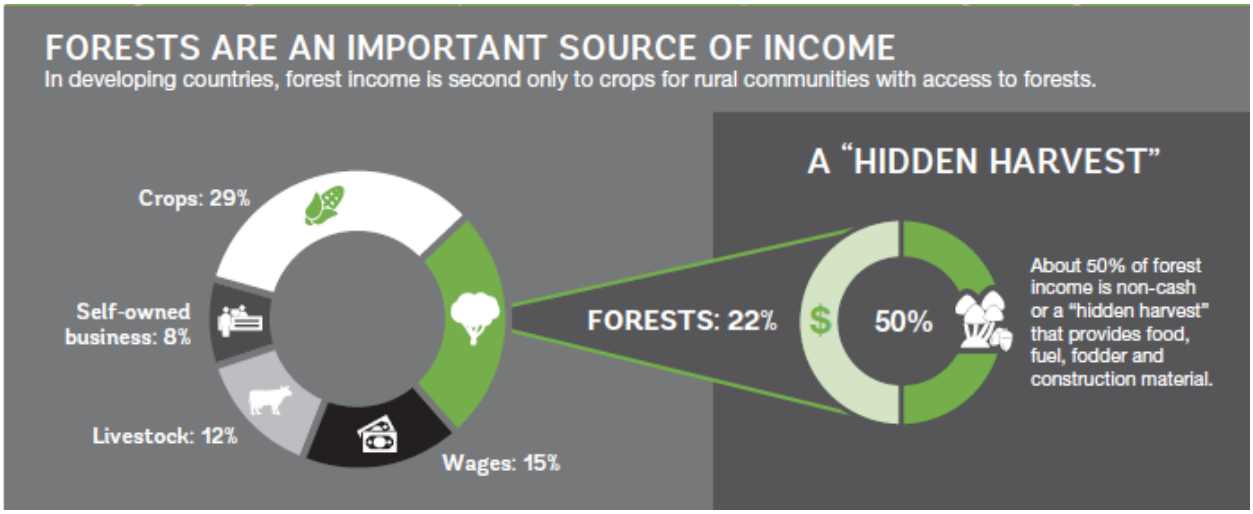


Figure 1. Forests as a Source of Income (based on results from the PEN, 2015)

Forest resources enable people to rise out of extreme poverty and reduce vulnerability. According to the PEN findings, an estimated nine percent of the rural population is lifted above the extreme poverty line[6] because of income from forest resources: the impact of forests on poverty is the greatest in the Africa region, with 11 percent of rural households lifted out of extreme poverty due to forest-related income garnered from forests[7].

In addition, forests represent an important safety net for rural people in times of economic distress. Many households respond to an income shock by seeking additional resources from forests (Angelsen and Dokken 2015). Forests also play an important role in offsetting losses in agricultural income due to weather shocks or changes in commodity prices (Noack et al. 2015). Forest income diversifies the income portfolio of all groups, but this diversification is particularly important for the poor.

Given the importance of forests for rural livelihoods and safety nets for the poor, effective and sustainable forest management is essential to ensure that forests continue to contribute to poverty reduction and that regressive effects from forest loss that risk driving people into extreme poverty are avoided.

[5] The PEN survey covers about 8,000 households in 24 countries across Sub-Saharan Africa, South and East Asia, and Latin America and is representative of smallholder-dominated communities living close to forests (with access to forest resources).
[6] Measured as US$1.25 per day in purchasing power parity terms.
[7] Based on results from the PEN survey.

1.2. Forests Mitigate Climate Change and Strengthen Resilience

Climate change poses a significant threat to meeting the WBG's corporate goals. Forests are uniquely placed in the climate change agenda as they can provide both mitigation and adaptation benefits: they can store and sequester carbon as well as provide ecosystem services that enhance the resilience of ecosystems. Maintaining and/or restoring healthy forests are thus an essential part of meeting the WBG goals.

Together, deforestation and forest degradation contributed to 2.9 billion tons of CO_2e annually during the 2005–10 period—about 15 percent of the world's greenhouse gas emissions and the third largest source after coal and oil. The Paris Agreement adopted at COP-21 recognizes forests as a critical piece of the effort to combat climate change. In their Nationally Determined Contributions (NDCs), more than 90 countries indicated their commitment to limit forest loss as well as to increase forest cover (through afforestation/reforestation as well as tree planting on farmlands).

In addition, forests play a crucial role in the adaptation agenda by enhancing ecosystem resilience to changing weather patterns. They provide important safety nets as well for local communities, helping them cope with climate shocks.[8] Forests can also constitute natural infrastructure that protects against the adverse impacts of climate change, such as mangroves that help reduce risks from disasters relating to climate extremes and sea level rise[9]. The capacity of a forest ecosystem itself to cope with changing environmental conditions and to deliver services that can mitigate climate shocks at a broader scale is determined by its biological and ecological resources (Russell, 2012).

1.3. Forests Support Jobs and Wealth Creation

Forests contribute to wealth generation and job creation. The formal timber sector employs more than 13.2 million people, produces more than 5,000 types of wood-based products, and generates a gross value added of just over $600 billion—nearly 1 percent of global GDP—each year[10] (FAO 2014). But these numbers reflect only part of the true contribution of the timber sector to the economy because the sector is mainly informal and therefore its value remains unreported. Including the informal sector in GDP calculations could double the contribution of the timber sector. The informal sector also creates considerably more jobs than the formal sector: an estimated 41 million people work full-time in the informal forest sector (FAO 2014). (See Figure 2.)

Local energy needs are largely met by informal wood production. It is estimated that some 840 million people, or 12 percent of the world's population, collect wood fuel and charcoal for their own use (FAO 2014). The wood fuel value chain creates employment opportunities for tens of millions of rural and urban households in the form of small-scale wood collection, charcoal production, transportation, and last-mile retail (World Bank 2015). It is estimated that the Sub-Saharan Africa charcoal sector alone employs 7 million people (World Bank 2011).

Non-wood forest products (NWFPs) generate significant income, with an added annual gross value of $88 billion: this category includes medicinal plants, bushmeat and game, nuts, and honey. In some regions

[8] Many forest products are more resilient to climate variability and extremes than crops and therefore, are crucial to the resilience of local livelihoods.

[9] Mangrove forests stabilize the coastline and reduce the height and energy of wind and swell waves passing through them, hence diminishing their ability to erode the sediments and to cause damage to coastal infrastructure.

[10] This GDP contribution is significantly higher in low-income countries (with an average of 7 percent) compared with middle-income and high-income countries (1 and 0.2 percent, respectively).

NWFPs are a major source of livelihoods. For example, in Cameroon bushmeat and valuable wild fruits account for more than 59 percent of the income of local communities (Angelsen et al. 2014).

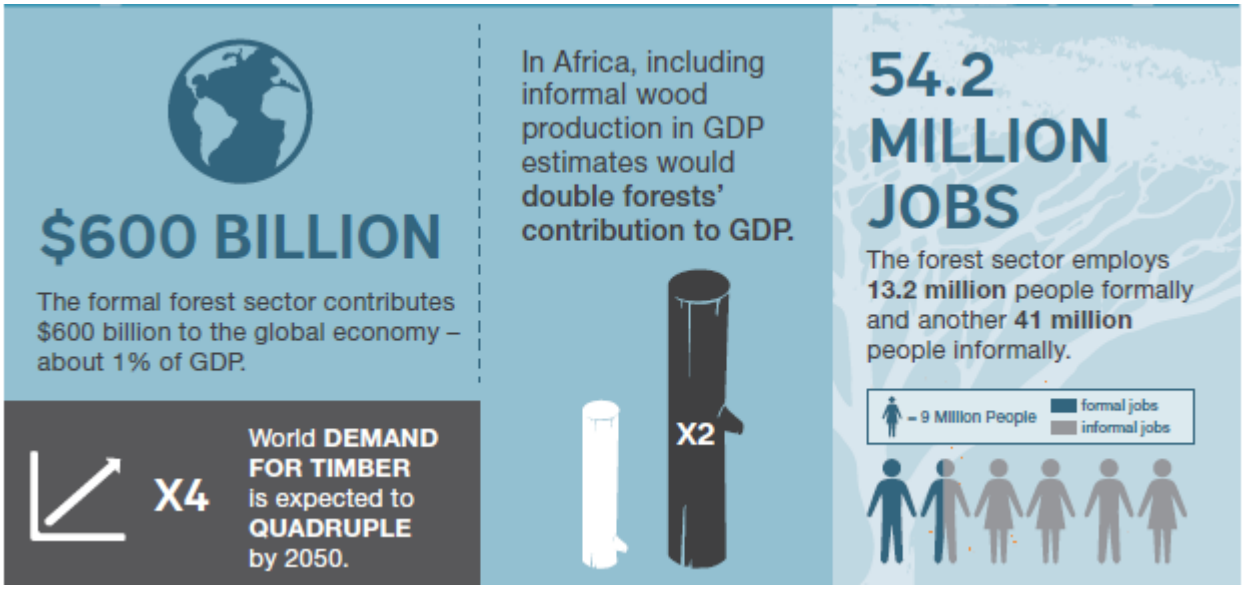


Figure 2. Forests' Contribution to the Economy

1.4. Forests Provide Ecosystem Services That Sustain Economies

Forests and their biodiversity play a crucial role in sustaining the planet's balance and provide basic services such as soil retention, erosion control, water and climate regulation, and pollination that are essential to sustain key economic sectors and services, including agriculture, energy, infrastructure, and sanitation. These are referred to as "ecosystem services"—and they are essential to people and economies.

Forests, especially primary forests, are among the most important repositories for terrestrial biological diversity. Together, all types of forests offer diverse habitats for plants, animals, and microorganisms. Biodiversity presents opportunities for medicines, food, raw materials, and employment. Significant gains have been made in conserving biodiversity, with roughly 12 percent of the global forest area designated as protected areas. However, protected areas are increasingly isolated within productive landscapes across the globe, constraining the migration of plants and animals and thus their capacity to adapt to changes in climate conditions[11].

The value of the ecosystem services delivered by forests and trees is often overlooked because it is not monetized. However, scientific literature and case studies increasingly allocate monetary values to such services, either in terms of economic gain or cost avoidance (See Figure 3). For example, the reduction in sedimentation in the Three Gorges Hydroelectric Power Plant in China resulting from large-scale reforestation in the upper watershed greatly reduced the enhancement costs of the reservoir needed to cope

[11] Migration has been one of the most observed strategies for plants and animals to cope with changes of temperature and precipitation patterns and such strategy is expected to amplify (Nielsen, 2005).

with a heavy sediment load[12] (Zhaoyin, Lee and Melching 2014). Forests and trees also offer protection against severe weather events such as hurricanes and tropical storms (Webster et al. 2005). Through the provision of key ecosystem services, forests and trees can play a significant role in increasing both the productivity and the resilience of farming systems and reducing damage from flooding and sea level rise. They increase local base water stream flow levels while reducing storm runoff, buffering agricultural production from the impacts of periodic interruptions in seasonal rainfall.

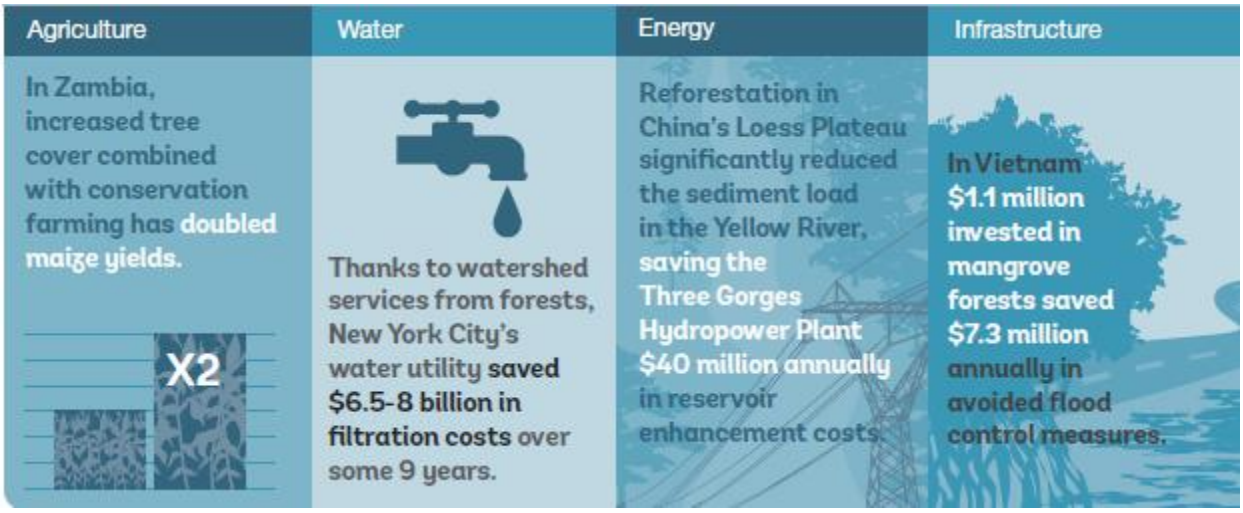


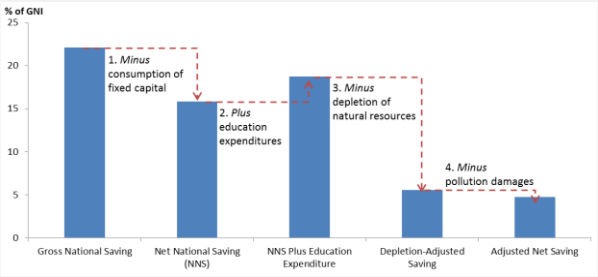
Figure 3. Examples of the Value of Forests' Ecosystem Services

Forest loss may jeopardize long-term macroeconomic sustainability. Standard income measures in national accounts do not regard the depletion of natural capital as a cost of production (as they do for produced capital). Therefore, for a resource-rich country, income generated from exploiting natural resources may appear high in the short term but may not be sustainable in the long run (see Box 1.1). The World Bank's Adjusted Net Savings (ANS) indicator, published annually in the *World Development Indicators* (*WDI*), offers a more inclusive picture of changes in a comprehensive set of capital assets that constitute a nation's wealth base, including a knowledgeable and skilled workforce and natural resources such as forests, fossil energy, metals, and minerals. Through this approach, the ANS provides national decision makers with a clear, relatively simple assessment of the sustainability level of their countries' growth policies.

[12] From 1950 to 1989, the Chinese government invested $1.6 billion for the enhancement and reinforcement of grand levees because the heavy sediment load from the Loess plateau caused continuous siltation of the lower Yellow River bed. Since 1989 the grand levee has not required further enhancements because erosion in the Loess plateau has been greatly reduced and the sediment load reduced from 1.6 billion tons to about 0.2 billion tons per year. It can thus be calculated that reforestation and sediment trapping in the Loess plateau has created a value of about $40 million per year.

Box 1.1. Forest Depletion in Uganda: A Significant Toll on Long-term Growth Sustainability

This figure shows the calculation of adjusted net saving for Uganda in 2013. It starts with gross national saving (22 percent of gross national income [GNI]). After adjusting for the consumption of fixed capital, education expenditures (representing investment in human capital), depletion of natural resources (primarily net forest depletion for Uganda), and pollution damages, Uganda's adjusted net saving is about 5 percent of GNI—much lower than the standard savings measure.



Source: World Bank 2015

1.5. Forests Sustain Cultures and Spiritual Values

A full appreciation of the benefits and services provided by forests also calls for a due consideration of the cultural and spiritual significance of forests and related landscapes for the people who live in them and depend on their resources. The variety of cultural value (as well as symbolic) functions ascribed to forests are as numerous and diverse as the communities and cultures living in forests around the world. While difficult to quantify, these values are undeniably real. Traditional knowledge held by forest communities, and particularly by indigenous peoples, has contributed to preserving biodiversity-rich forests for countless generations. While this is still often disregarded, there is a growing recognition that this deep-rooted ecological knowledge can help form the basis for sustainable forest management approaches, whether the approaches have a conservation thrust or more productive ends (as described in Box 2.7 on community forests in Mexico).

II. Current Challenges and Opportunities for Forests

Forests are under significant threat. Population growth, along with changes in consumption patterns in middle-income countries, has generated a boom in the demand for food, fiber, energy, and minerals, which in turn exacerbates pressures on natural forests. Although the pace of global deforestation has slowed since the 1990s, it remains high: about 13 million hectares (gross) were converted annually to other uses such as agriculture, infrastructure development, and oil and minerals extraction or were lost through natural causes—in many cases exacerbated by climate change—between 2000 and 2010. During the same period, reforestation partially offset these losses,[13] reducing annual net forest loss to 5.6 million hectares. But this still amounts to a loss of forest area larger than Costa Rica each year (FAO 2014). Furthermore, as much as 40 million hectares of primary forests were converted to secondary forests.

With concerted action, society could make significantly improved and long-lasting use of global forest resources for poverty eradication and sustainable economic development. While forests are still facing major challenges, opportunities have emerged that could transform the way they are managed.

[13] While forest cover has globally decreased, some regions have shown significant increases in response to different land use dynamics. I: : n Central Europe, generally the forest cover increase is the result of changing production patterns and urbanization leading to abandoned former agricultural lands transitioning back to forests. In East Asia, and particularly in China, active reforestation has played a major role. In Latin America and Africa regions, forest area has been on the decline.

1.1. Climate Change

Challenge: The current and projected impacts of climate change, including but not limited to rising temperatures and increasingly unpredictable precipitation patterns, increase vulnerability of forests to pest and diseases and to fires. At the same time, forest loss affects the water cycles on a large scale and can put water supplies and food security at risk.

Opportunity: Forests and their biodiversity make a crucial contribution to mitigating the impacts of climate change not only by absorbing GHGs from the atmosphere but also by regulating water flows, protecting coastal communities from extreme events and sea level rise, and offering plant and animal species migratory corridors to more suitable habitats. Forests and trees are the cornerstone of the land restoration agenda: some two billion hectares of lost or degraded forests and landscapes could be restored and rehabilitated to functional and productive ecosystems. Essential to this process is the restoration of the biodiversity within forest systems, as that is the backbone of a healthy ecosystem. The restoration of ecosystems and their biodiversity would generate increased economic opportunities in rural areas, deliver improved rural livelihoods and food security, help fill the household energy gaps as a renewable energy source, enhance climate resilience, and mitigate greenhouse gas emissions while taking pressure off pristine forests.

1.2. Competing Uses of Land

Challenge: For a long time the default development path for forest-rich nations has been to convert natural forests into agricultural lands or other land uses. This development model is usually referred to as the "forest transition theory" holding that economic growth goes hand in hand with deforestation (see Box 1.2) (Mather, 1992). This theory is now questioned, however, and some countries, such as Brazil, show that the curves of deforestation and economic growth can be decoupled and that increased agricultural value does not have to come at the expense of the forests.

Box 1.2: Examples of Forest Loss in Various Regions

Over 16 percent of Brazil's original (pre-Columbian) Amazonian forest has disappeared, and current rates of forest loss are on the order of two million hectares per year. In Indonesia, it is estimated that more than two million hectares are being degraded and deforested each year due to unsustainable forest production and conversion to other uses. And after a century of forest conversion to cocoa production, reaching one million tons of cocoa produced per year, Ghana has reduced by 80 percent the area of natural forests.

Opportunity: By working through a forest-smart multi-sectoral or landscape approach, the forests and services they provide are duly considered as key elements of sustainable development agenda. This translates into decisions on land-uses that seek to minimize or mitigate negative impacts on forests and enhance their positive contributions to other sectors. Greater attention to the role of forests in national development strategies can provide benefits for long-term food security, poverty reduction, social development, and green growth. Data and information regarding long-term impacts of potential decisions on forests can inform discussions on trade-offs in land use planning.

1.3. Growing Demand for Forest Products

Challenge: Demand for timber products is growing rapidly, with the demand for global industrial roundwood predicted to quadruple by 2050 (Indufor 2012). This increase surpasses by a large amount the supply growth, deepening the projected yearly supply deficit from one billion m^3 in 2012 to 4.5 billion m^3 in 2050. This rising global demand for timber and other forest products risks fueling unsustainable and often illegal timber trade

flows. While planted forests can represent a promising option to fill the gap in timber supply, poorly designed planted forests can also lead to the degradation of critical ecosystems and the erosion of ecological services delivered by these ecosystems, and rights and interests of local communities are not always respected.

Opportunity: Since 2000, the area of planted forests has increased considerably, and it now accounts for around seven percent of the total area of global forests—some 280 million ha. The area continues to increase at a rate of around five million hectares per year both through afforestation as well as through managed natural regeneration. The expansion of planted forests is largely driven by the private sector. Carefully designed and managed planted forests can present major opportunities for job creation and sustainable economic growth in rural areas. Certification schemes as well as new models (such as the "New Generation Plantations") are paving the way for responsible investments in sustainable management of forests—natural and planted—in southern countries.

1.4. Forest Governance

Challenge: Estimates indicate that industrial hardwood timber of questionable origins might constitute 23–30 percent of global supply and that the availability of illegal supply depresses prices by 7–16 percent. Illegal logging in public lands alone results in estimated losses in assets and revenue in excess of $10 billion annually. Due to its value and scale, illegal logging is also a driver of wider systemic corruption and can fuel conflicts and threaten security.[14]

Opportunity: Progress has been made over the last 10 years in tackling illegal logging,[15] resulting from a combination of actions taken at the international and national levels to better monitor and track illegal activities.[16] Forest governance requires, however, continuous efforts to tackle emerging challenges through policy changes, strengthened institutions, and enhanced monitoring systems. New information and communication technologies (ICTs) provide opportunities to monitor forest cover in almost in real time, allowing for detection of fires and deforestation hotspots. Timber can now be tracked all along the supply chain, and public participation is enhanced through open data applications (such as e-government and Open Government).

1.5. Private Financing for Sustainable Forest Management

Challenge: The required funding for sustainable forest management is estimated to be between $70 billion and $160 billion per year globally (World Bank 2014): only to supply the world's need for wood products amount to about $50 billion. Mobilizing adequate financing for the forest sector remains a challenge. Private financial flows to this sector are estimated to be as high as $15 billion per year (Asen, Savenije, and Schmidt 2012). While private financing is promising, it is not yet distributed evenly across regions, and the potential in many developing countries has yet to materialize.[17]

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[14] Interpol has linked illegal charcoal production and terrorist groups. According to its estimates, in East Africa a terrorist group can earn $38–56 million a year solely from the illegal charcoal trade. In Africa overall, these groups can make $111–289 million a year from the illegal or unregulated charcoal trade.

[15] Recent studies indicate that since 2000 illegal logging has fallen around 50 percent in Cameroon, between 50 and 75 percent in the Brazilian Amazon, and 75 percent in Indonesia, while imports of illegally sourced wood to the seven major consumer and processing countries are down 30 percent from their peak (Lawson and MacFaul 2010).

[16] Such as legality schemes (such as the Forest Law Enforcement, Governance and Trade program and the FLEGT and Lacey Act), procurement regulations, and forest certification.

[17] Obstacles include higher real and perceived risks in investing in developing countries than in industrialized ones.

Opportunity: Increased investments in plantations are expected to go to emerging and developing countries. This represents a shift in this industry, where historically private investment in timber production and processing has been concentrated in industrial countries. Some countries in Latin America[18] have significantly increased their plantation area over the past decade, but opportunities exist in other regions, particularly in Africa. There is tremendous potential to unlock the investment of responsible private operators in sustainable forest management and forest product value chains in emerging and developing countries. This requires a robust regulatory framework that ensures that forest investments are done in an environmentally friendly and socially responsible way.

1.6. Rights over Forests

Challenge: The widespread pressures on natural forests—either human-made (e.g., incursions by loggers, deforestation) or natural (e.g., climate change–induced droughts or fires)—have increased the vulnerability of indigenous peoples and other traditional-living rural populations, by jeopardizing their secured access to forest lands and resources. Where the state has asserted its rights to land and forests and has subsequently chosen to allocate these rights to investors in the forestry or other sectors, conflicts with indigenous peoples and local communities that have long depended on these areas have escalated.

Opportunity: In the past decades, there has been a trend toward more community involvement in decision-making processes related to the use of forests.[19] Research shows that decentralization of the use and ownership of forests and trees to local communities improves forest conservation and management, with significant productivity and yield increases (RRI, 2014). Local control over resources and community-based forest management also offer opportunities to reduce poverty in forest-dependent households.

[18] Brazil, Mexico, Chile, Argentina, and Uruguay have respectively 7.7 million, 0.9 million, 3.0 million, 1.2 million, and 1.0 million hectares of planted forests (FAO 2015).

[19] In 2013, 30.1 percent of global forests in low- and middle-income countries were designated for or owned by local communities or indigenous peoples, 8.7 percent were owned by private firms or individuals, and the remaining 61.3 percent were owned by the state. In 2002, these shares were respectively 21.2, 7.4, and 71.4 percent.

CHAPTER 2. Focus Areas and Cross-Cutting Themes under the Forest Action Plan FY16–20

Chapter Summary

The *Forest Action Plan FY16–20* builds on and strengthens the WBG Forest Strategy (*Sustaining Forests*) and identifies two focus areas for WBG engagement for the next five years: sustainable forestry, ensuring that investments related to forest contribute to sustainable management of forests and value chains, and forest-smart interventions in other sectors, supporting interventions that do not come at the expense of the forest capital. These two focus areas build on three cross-cutting themes that aim at improving the enabling environment and strengthening the foundations for positive forest outcomes: climate change and resilience, rights and participation; and institutions and governance.

Through the FAP, the WBG aims to boost the potential of the forestry sector to lift people out of poverty and generate lasting economic returns in clients' countries. It will also support client countries to define development pathways that fully take into account the importance of their natural capital: in forest-rich countries, the Bank will aim to actively minimize adverse impacts on forests of investments in sectors such as agriculture, energy, transport, and mining. In countries where forest capital has been depleted, the WBG will aim at supporting clients' efforts to restore this capital and associated services through multi-sectoral engagements. In all cases, an integrated landscape approach will guide WBG engagement.

I. The WBG Value Proposition

The World Bank Group recognizes the importance of forests to development and to delivering on its corporate goals of eradicating extreme poverty and boosting shared prosperity by 2030 in a sustainable manner, as described in Chapter 1. (See Figure 4.). The Forest Action Plan will guide WBG interventions over the next five years.

Figure 4. Forests' Potential to Contribute to WBG Goals

The debate over how the WBG should support forest management in developing countries has long been hampered by multiple trade-offs between land uses. How can forests be conserved while increasing agricultural productivity? How can demands for timber and other forest products be met without contributing to forest loss? How can GHG emissions be reduced in the face of increasing energy demands? How can the rights of indigenous people and forest-dependent communities be protected while encouraging the private sector to make productive investments in forests? How can competing demands for other natural resources, such as water, be managed in a way that accounts for the value of forests?

The evolving global context requires moving beyond just accepting negative trade-offs and calls for greater attention to how the forests and their biodiversity can be incorporated more fully into inclusive development strategies that contribute to food security, poverty reduction, social development, and green growth. For example: How can forest and forest-related supply chains generate economic opportunities and jobs in rural areas? How can forests and their biodiversity contribute to strengthening resilience and productivity in farming systems through climate-smart agriculture? How can forest conservation, including reforestation and restoration, improve the reliability and sustainability of urban water supplies? How can forest investment strengthen local rights of use and access to natural resources?

These questions feature in the WBG *Forest Action Plan FY16–20* (FAP). It directly builds on the 2002 WBG Forest Strategy (*Sustaining Forests*), which defined three interdependent pillars that are still deemed relevant today to guide our work on forests: harnessing the potential of forests to reduce poverty, integrating forests in sustainable economic development, and protecting vital local and global forest ecosystem services and values.

Responding to the emerging challenges and opportunities on forests, the FAP defines the modalities of operationalization of the 2002 Forestry Strategy for the next five years. It proposes the priority areas of engagement for the WBG and identifies two Focus Areas and three cross-cutting themes (see Figure 5). These priority areas build on an in-depth assessment of the WBG forest portfolio over the FY02-15 period, using lessons learnt and experience gained over the last decade (see Appendix A), as well as a detailed analysis of the emerging demands coming from the clients. Such exercise has helped prioritize key intervention areas where the WBG has already credible track records and/or a potential to grow, based on comparative advantage. The *Forest Action Plan FY16-20* has been prepared as a joint effort with the different entities of the WBG (World Bank, IFC and MIGA) with the objective to maximize the complementarity and impacts of interventions of these three entities. It has also benefitted from inputs from various stakeholders.

The FAP articulates the WBG's value proposition on forests. In particular, it responds to priority actions identified by countries in their Nationally Determined Contribution to the UNFCCC. In that sense, it fully aligns with the WBG Climate Change Action Plan.

Figure 5. FAP Focus Areas and Cross-cutting Themes

In practice, the distinction between these two focus areas is somewhat artificial because there are significant synergies between them. Many operations in the current portfolio or in the pipeline directly respond to both areas. Nonetheless, such an approach is helpful for highlighting key themes in the program and entry points for engaging a range of stakeholders and sectors.

WBG support will depend on country-specific contexts and will be tailored to the specific needs, requests and priorities identified by clients. This will translate into different types of engagement with various stakeholder groups (public sector institutions, private sector actors, community-based organizations, and civil society). Selectivity will be a guiding principle in the implementation of the Forest Action Plan, and discussions with clients will define how the WBG interventions can be responsive to country situations, and delivered at the scale necessary to have transformative impact.

II. Focus Area 1: Sustainable Forestry

As detailed earlier, forests in many developing countries support the livelihoods of hundreds of millions of people, mostly the poor and vulnerable, who are often remote from market opportunities. Beyond sustaining livelihoods, sustainably managed forests also offer opportunities to lift people out of poverty where alternatives do not exist. Even in the most advanced economies, some pockets of poverty often remain in forested areas. At the same time, population growth and associated changes in consumption patterns are increasing demand for forest products (wood-based energy, construction, poles, etc.) and placing more pressure on natural forests. Responding to the growing demand while preserving natural forests is an enormous challenge. The sustainable management of existing forests can only meet a fraction of this demand. There is an urgent need for ambitious interventions and investments to stimulate the diversification

of the supply through reforestation/afforestation planting trees on farms. In addition, producers need to be effectively connected to consumers through sustainable value chains.

The Forest Action Plan aims to support investments in sustainable forestry with a particular focus on optimizing the potential of natural forests to provide cash and non-cash income and to generate jobs and economic opportunities for forest dwellers; on supporting tree planting and plantations to respond to growing demand for timber, fiber and fuelwood while reducing pressures on natural forests; on investing in rehabilitating degraded lands; and on promoting sustainable value chains through small and medium-size forest enterprises (SMFEs) and responsible investments in forests.

2.1. Protect and Optimize the Management of Natural Forests

Forests have the potential to support job and wealth creation for forests dwellers in many different ways: products extracted from the forests (timber and non-timber) can be used or sold and sustain profitable value chains; unique forest biodiversity can attract nature-based tourism; and forest dwellers can be rewarded for their forest stewardship through payments. Moreover, protection of natural habitats and associated biodiversity is understood as core to countries' wealth. In many countries, however, this potential is not fully tapped. The World Bank Group will aim to support clients unlock this potential through a variety of potential supports, as described in the below section.

Participatory Forest Management

Participatory forest management has been a key focus of the Bank's work in many countries around the world, such as Mexico, Turkey and Lao-PDR (see Box 2.1). In these countries the Bank has helped support innovative arrangements that gave local communities a much larger stake in forest management and in the rehabilitation of degraded woodlands, pastures, and watersheds. Such interventions have had significant impacts in terms of poverty alleviation and economic opportunities[20] However, in order to yield expected results, they need to carefully cover the dimensions of rights and access (see Cross-cutting theme on Rights and Participation).

Box 2.1: Community-Based Management of Forests in Lao-PDR

The Bank has been supporting the community-based management of forests in Lao-PDR for more than 20 years, which has shown significant impacts in terms of poverty alleviation in forested areas, through enhanced involvement of communities and benefit-sharing schemes. The current SUFORD project (combining IBRD and FIP resources for a total amount of $31.8 million, with Technical Assistance from the government of Finland) supports the participatory sustainable forest management approach and covers 2.3 million ha located in 41 production forests in 13 provinces. It works with the provincial, district, and local authorities to improve the livelihood of more than 400,000 rural community members in more than 1,000 villages.

Many countries (including such diverse countries as Indonesia, Russia and Moldova) have decentralized their forest management to local authorities at different levels.[21]. While these models were intended to bring forests closer to local control, they were seldom matched with the transfer needed resources or technical management capacity.

[20] As per Implementation Completion Review (ICR) reports of the various projects in above-mentioned countries.

[21] In some other East European countries, forests nationalized during the communist era were restituted to former private, institutional, and communal owners.

Key Actions: Building on successful experiences, the Bank will aim to continue supporting participatory management of forests. The approach and models will be applied in response to country-specific needs, circumstances, and demand. In South Asia, community-based forest management approaches are very common (forest user groups in Nepal, for instance, and joint forest management in India). However, these initiatives have been able to only partially address the first-generation problems of ownership; issues related to increased investments to enhance productivity and equitable distribution of benefits persist. In Africa, the concept of community forestry is much more recent, and focus could be given to social organization of the communities. In Latin America and the Caribbean, which has a long experience of community-based forestry, the highest returns would come from a focus on integration to the value chain and market access. In Eastern Europe and Central Asia, specific focus could be on accompanying the decentralization of the forest management functions, ensuring an adequate transfer of funds and the strengthening of local technical capacities.

Sustainable Management of Production Forests

Forest productivity can be enhanced through tailored silvicultural interventions that increase the potential offtake of timber and non-wood forest products through sustainable forest management measures to meet a range of market demands. At the institutional level, good forest management planning is required, and institutions need to be strengthened to optimize the use of natural forests in a sustainable way. To inform decisions, good inventory data, technically and financially sound management plans, and knowledge of advanced silvicultural practices are needed. Changes in key parameters (temperature, humidity) can be expected to drastically affect forest health and increase the vulnerability to shocks. This will require adaptive silvicultural management techniques to cope with increased occurrence of fires and diseases.

Key Actions: The World Bank is ready to support governments to tap the full potential of sustainable forest management for timber production by building capacity at various levels (national as well as local), enhancing forest management practices, and investing in pest management and fire control (see Box 2.2). Building sound databases on forest resources and robust monitoring systems will also remain a key area of focus (see cross-cutting theme on institutions and governance). The World Bank will carefully consider any new potential engagement in forest concession by assessing *ex-ante* economic, social, and environmental impacts using Strategic Environmental and Social Assessments (SESAs).

Box 2.2: Promote Better Forest Management Practices in Belarus

The objective of the project is to enhance silvicultural management and reforestation and afforestation, increase the use of felling residues, and improve the public good contribution from forests in targeted forest areas. The project supports the intensification of the silviculture through investment in modern harvesting machinery. It will also facilitate modernization of forest nurseries, installation of video and communications equipment for monitoring, surveillance and detection of fires, introduction of fire-fighting equipment to help extinguish the fires once started, as well as the development of a web-based interface for early alerts. It is estimated that the measures on prevention, improved detection and more timely and effective response to forest fires is expected to reduce future losses by 30 percent.

Sustainable Production of Non-wood Forest Products

Beyond timber products, forests provide essential non-wood forest products (NWFPs), such as fruit, shoots, medicinal plants, roots, mushrooms, wildlife, and insects gathered from the forest. These products are particularly important for women-led households in many poor rural areas. NWFP extraction reduces risk and vulnerability in two ways: as a diversification strategy, it provides households with a wider range of welfare-

improving activities and, as a coping strategy, it provides food or income potential to balance out consumption levels when agricultural or other outputs fall.[22]

***Key Actions*:** The World Bank will aim to ensure that the potential of NWFPs is properly assessed and fully embedded in broader forest investments. In most countries, the regulatory framework related to the management of NWFPs is often weak or overly complex, which excludes most activities from the formal sector. Building on the extensive work done over the last two decades on regulations for timber products, the World Bank will support countries willing to frame regulations that can better accompany the development of sustainable NWFP value chains (see Box 2.3).

Box 2.3: Non-Wood Forest Products: An Economic Opportunity for Forest Communities in Brazil

Forest-dependent communities are among the most marginalized in the world. Deforestation has an impact on both their surroundings and their livelihoods. A new Dedicated Grant Mechanism (DGM), designed by and for those communities and financed by the Forest Investment Program, puts indigenous peoples and local communities in charge of design and funding decisions for projects that fight forest loss. The first DGM project implemented by the World Bank in Brazil ($6.5 million in FIP funding) helps finance agroforestry initiatives based on native and adapted fruits, pays for processing units for agriculture and NWFPs, and assists in the production and commercialization of handicrafts in the *Cerrado* region.

Forest Biodiversity Protection

Forests, especially primary forests, are among the most important repositories for terrestrial biological diversity. Together, all types of forests offer diverse habitats for plants, animals, and microorganisms. Biodiversity presents opportunities for medicines, food, raw materials, and employment. Significant gains have been made in conserving biodiversity, with roughly 12 percent of global forest area designated as protected areas. However, protected areas are increasingly isolated within productive landscapes across the globe. As a matter of fact, for decades, there was a widely held view that protected areas should remain in a vacuum separated from the people who live in and around them, rooted in the notion that they should be set apart from the rest of the landscape and that measures to protect biodiversity should remove anthropogenic influences. This mindset has evolved and there is now a widespread recognition that the only solutions to protected area management that work are those that fully embrace the role of local communities and fit into a broader land use model at the territorial level.[23] In addition, biodiversity is not only found in natural forests under protection status; it represents an essential element of production forests and trees in the landscape (including plantations).

***Key Actions*:** The WBG recognizes the importance of preserving forest wealth and biodiversity. It will continue supporting efforts from its clients to establish and properly manage their forest protected areas by helping them tap into designated resources (such as the Global Environment Facility, GEF). The WBG has long promoted an integrated approach to biodiversity in its portfolio. Under the Forest Action plan, this trend will be reinforced with the push for more integrated interventions, where protected areas are fully embedded into a broader landscape.

[22] In Latin America, for example, Brazil nuts and Assai palm represent high commercial value and constitute a key contribution to household incomes; in Laos, NWFPs are estimated to provide roughly 40 percent of household income nationally, and the figure rises to 90 percent among the rural poor.

[23] As a matter of fact, the establishment of protected areas has been particularly efficient in protecting globally significant forest biodiversity when indigenous peoples and forest-dependent communities have been brought into the management structures.

Nature-based Tourism

Nature-based tourism (or ecotourism) is becoming an increasingly important subsector in some developing countries, generating significant revenues for both governments and local communities. Natural forests and associated biodiversity often feature high in nature-based tourism offers and are being promoted as such by many developing countries. Preserving the wealth of forests is a requisite, and degradation of forest landscapes undermines tourism potential as well as other economic opportunities (see Box 2.4).

Key Actions: The WBG will support clients interested in materializing the potential of nature-based tourism as a key contributor to their economies. In order to fully tap this potential, a coordinated approach is required to respond to various challenges—the regulatory framework, infrastructure (mostly transport and lodging), and professional skills as well as nature's offer. The WBG is uniquely positioned to present a comprehensive offer to clients interested in supporting sustainable development of the nature-based tourism sector through an appropriate set of technical skills as well as a financial package (combining International Bank for Reconstruction and Development (IBRD)/International Development Association (IDA) resources for productive investments, IFC resources for private engagement, MIGA guarantees for risk mitigation, and GEF grants for nature-based offers).

Box 2.4. Nepal: An Urgent Need to Rebuild the Forest-based Tourism

In 2013/14, 70 percent of all tourists in Nepal visited protected areas, ensuring that nature-based tourism is the largest tourism contributor to the national economy. Seven of the 20 protected areas (PAs) in Nepal were damaged in the April 2015 earthquake: two of the top nature tourism destinations (the World Heritage site Sagaramatha National Park and the Annapurna Conservation Area) are among the seven affected PAs. This leaves the local communities who live in the buffer zones of protected areas and who depend largely on tourism-related activities very vulnerable.

Restoration of nature-based tourism and community livelihoods in an integrated manner requires urgent attention. Investments to revive the local economy and help the buffer-zone communities get back on their feet is an immediate need not only for recovering from the earthquake but for restoring and enhancing a principal source of economic growth in Nepal. In June 2015, the government of Nepal requested Bank support in restoring nature-based tourism and livelihoods in and around the earthquake-affected protected areas.

Payment for Ecosystem Services

Healthy forests and trees in the landscape provide critical ecosystem services. However, the value of these services is ordinarily not quantified, and thus they are often overlooked in decision-making processes. Countries in Latin America, such as Brazil, Mexico, Costa Rica, and Colombia, have established programs of payments for ecosystem services (PES) that put a monetary value on the services delivered by forests and trees. Such value is paid by the “users” of the services to the “forest dwellers” that preserve the forests and associated services. These PES programs have shown results in providing incentives for behaviors supporting a more sustainable management of forest resources; in many countries, they have provided a significant contribution to incomes.

For the past two decades, the WBG has played a critical role in supporting the development of markets for ecosystem services and for global public goods, especially for forest biodiversity. It has supported the establishment and further refinement of most of the existing PES schemes today in place in Latin America. The ongoing work conducted under the Wealth Accounting and the Valuation of Ecosystem Services

(WAVES) initiative[24] also helps construct a better understanding of the value of ecosystem services performed by natural capital, such as forests, and could inform the development of future PES schemes.

Key Actions: WBG engagement in this area is expected to grow. The WB will continue supporting the setup of PES schemes in interested countries. Demands are emerging from other regions (particularly Africa), and technical support as well as cross-fertilization through South-South exchange will be promoted. It will also continue piloting innovative models—for example, some teams are working on piloting direct cash transfers to forest dwellers for sustainable forestry practices in South Asia and Central Asia.

Performance-based Payments under REDD+

The mechanism established under the UNFCCC rewards developing countries for their efforts to reduce emissions from deforestation and forest degradation (REDD+), to promote sustainable management of forests, and to enhance forest carbon stocks. Phase 3 of this mechanism[25] provides payments for performance: payments are made for each ton of carbon (or equivalent) that is not emitted to the atmosphere or that is sequestered through forest ecosystems.

With instruments such as the BioCarbon Fund (BioCF) and the Carbon Fund of the Forest Carbon Partnership Facility, the World Bank has been pioneering results-based payments for verified GHG emission reductions over the last decade. The experience from the first two tranches of the BioCarbon Fund has demonstrated that carbon payments can represent a substantial addition to the disposable income of forest dwellers. Applying lessons learnt from these pilots to the third tranche of the BioCF (the Initiative for Sustainable Forest Landscapes, ISFL) and the FCPF Carbon Fund that both support large-scale REDD+ programs, the WBG will work on defining models that can scale up the potential of carbon transactions to combat climate change while offering forest communities economic opportunities through sound benefit-sharing mechanisms.

Key Actions: With the increase in funding for climate action and interest in performance-based payment mechanisms,[26] the World Bank will aim to deploy these instruments strategically to support client countries' efforts toward a low-carbon development trajectory. These instruments are a prominent feature in the WBG forest pipeline, form part of the programmatic approach, and are likely to drive the portfolio in some key countries.[27]

2.2. Encourage Sustainable Plantations and Tree Planting

Economic development, coupled with population growth and urbanization, increases the demand for forest products, and this demand is projected to grow dramatically in the coming decades. As noted earlier, the annual demand for global industrial roundwood is projected to quadruple by 2050, going from 1.5 billion cubic

[24] Pilot countries include Guatemala, Botswana, Colombia, Costa Rica, India, Madagascar, and the Philippines.
[25] The REDD+ Mechanism is structured around three phases (that do not have to be implemented in a sequential way and can overlap, depending on country-specific context): Phase 1 – Readiness, Phase 2 – Investment and Phase 3 – Performance-based payments.
[26] The Paris Agreement explicitly mentions in paragraph 55 the results-based payment for actions aiming at reducing emissions from deforestation and forest degradation.
[27] In 2015, performance-based programs were under preparation in 22 countries: Chile, Colombia, Côte d'Ivoire, Costa Rica, the Democratic Republic of Congo, Dominican Republic, Ethiopia, Fiji, Ghana, Guatemala, Indonesia, Lao PDR, Liberia, Madagascar, Mexico, Mozambique, Nepal, Nicaragua, Peru, the Republic of Congo, Vietnam, and Zambia (see Appendix A).

meters in 2012 to 6 billion square meters (Indufor 2012). In Africa, there is no sign of a tempering in the demand for wood-based energy.

Natural forests alone will never meet these demands, nor should they—as this would put them under significant risk and would alter their long-term capacity to deliver social and ecosystem services. At the same time, it is estimated that worldwide about two billion hectares of forest landscapes have been degraded or even lost. These could be restored to functional ecosystems services through reforestation and tree planting, while delivering the triple win of improving rural livelihoods and food security, increasing climate resilience, and helping mitigation climate change (through sequestration of carbon and reduction of pressure on pristine forests).

Since 2000, the area of planted forests has increased considerably. Historically, most of the planted forests are found in northern countries, but there are increasing investments in southern countries. In some countries in Latin America there has been an aggressive effort, primarily led by the private sector, to grow plantations over the past decades: as a result, Brazil, Mexico, Chile, Argentina, and Uruguay have 7.7 million, 0.9 million, 3.0 million, 1.2 million, and 1.0 million hectares of planted forests, respectively (FAO 2015).

When carefully designed and managed, planted forests can produce far more timber per year and per hectare compared to natural forests, and this can relieve pressure on natural forests/woodlands and preserve their capacity to deliver ecosystem services. Planted forests can also represent major opportunities for job creation and sustainable economic growth in rural areas. However, examples of bad plantations are not uncommon.[28] As the area of intensively managed plantation grows, and in order to ensure that the potential of planted forests (social, economic, and environment) fully materializes, there is an urgent need to mainstream good plantation practices.

Responsible Investments in Large-scale Commercial Reforestation

As noted in Chapter 1, net private financial flows to the forest sector in developing countries are estimated to be as high as $15 billion per year (Asen, Savenije, and Schmidt 2012). With the growing demand for timber products and with clear prospects that production is shifting from industrial to developing countries, private investments will shape the way forests are managed in developing countries. While this offers tremendous potential for boosting the forestry sector's contribution to the rural economy in those countries, it will need to be managed with strong environmental and social safeguards for these investments to be both sustainable and equitable.

Key Actions: The WBG aims to help establish an attractive business climate for private operators while setting high standards for responsible investments. This specific area of engagement opens promising avenues to strengthen the collaboration between the different entities of the World Bank Group by building on their respective comparative advantages. The World Bank aims to work with governments to define a sound regulatory framework that enables responsible investments on commercial plantations, based on economically, socially, and environmentally sound standards. In turn, the IFC will encourage investments of responsible private operators, ensuring that such investments are economically viable and profitable and are

[28] Examples of bad plantations: those established in place of natural forests and other important ecosystems, those that have not respected the rights and interests of local communities, and those that are developed without consideration of forest biodiversity. Poorly designed planted forests can also lead to the degradation of critical ecosystems.

measurably "pro-poor."[29] MIGA can unlock potential investments by reducing risks associated with them. Such collaboration between the public and private sector arms of the World Bank Group has already started in a few countries, such as Colombia, Ethiopia, and Mozambique. It is expected that this portfolio will expand in the next five years, as interest in commercial plantations is growing in many countries.[30]

Smallholder Plantations and Tree Planting

Another interesting trend that has emerged over the past decade is tree planting and small-scale plantations in agricultural landscapes. Trees have become an integral part of the agricultural landscape in all regions except North Africa and West Asia. Virtually all of Central America's agricultural land has at least 10 percent tree cover, as does 82 percent of Southeast Asia's, 81 percent of South America's, and 47 percent of Sub-Saharan Africa's. Such dynamics not only yield significant economic benefits through productivity increase, they also generate environmental gains, including improved habitats and connectivity for biodiversity as well as contributing to mitigating climate change and adapting to its impact.

A few countries have already supported smallholder plantations and tree planting as a credible response to the growing local demand for timber products. For example, the government of Vietnam launched a program to support the development of smallholder tree plantations as an alternative to large-scale industrial-style plantations. Working with smallholders on small plantations has shown significant—and measured—impacts on reducing poverty both directly and indirectly (see Box 2.5).

Box 2.5. Sustainably Managed Smallholder Plantations in Vietnam

A project to support the development of environmentally sustainable and commercially viable smallholder tree plantations in Vietnam led to the cultivation of 76,500 hectares of previously non-forested land by nearly 41,000 households, providing them with sustainable economic revenues. The project provided positive financial returns to smallholder investors that significantly contributed to reduce poverty in the targeted areas (for instance, Thua Thien Hue: from 6.4% to 8.9%; Quang Nam: from 22.8% to 18.2%; Quang Ngai: from 22.5% to 17.6%; and Binh Dinh from 16.0% to 13.5%). The 2005–15 project, which received $48.5 million in funding from the WBG, also promoted land tenure and financial access. The use of rotational harvesting has made the plantations more sustainable. The project also successfully piloted a timber certification program in a small section of plot, from which timber with the certification earns a 30 percent premium. The project has also contributed to broader achievements in land tenure and inclusive finance. Some 29,000 households received land use rights certification, and loans managed by a Vietnamese state-owned development bank were extended to more than 28,000 farmer households, 98 percent of whom have met their repayments. The project included the provision of technical assistance in business planning and harvesting.

In African countries, private woodlots respond to the growing demand for wood-based energy. The rising price of wood, due in part to increased demand and greater resource scarcity, can make the production of wood on private woodlots an increasingly viable enterprise for farmers across the region (see Box 2.6). In addition to increased farm incomes, the wood lots reduce farmers' vulnerability to shocks (for example, price or climatic shocks).

Box 2.6. Senegal: Sustainable and Participatory Energy Project (PROGEDE I)

The first phase of SPEMP/PROGEDE was launched in 1997 and closed in December 2004, having fully achieved or surpassed all its objectives and developmental outcomes and outputs. PROGEDE was rated as Highly Satisfactory. The Sustainable Woodfuels

[29] In the upstream segment of the forest value chain, the IFC will focus exclusively on planted forests (and not on natural forests).
[30] The World Bank is already responding to a growing demand for analytical work from governments such as Colombia, Paraguay, and Mozambique that are seeking support to define an appropriate framework based on international best practices for plantations.

Supply Management Component of the project directly benefited some 250,000 people—equivalent to approximately 21 percent of the population in the Tambacounda and Kolda regions. A sustainable incremental income generation base (wood and non-wood products) of about $12.5 million per year was established, equivalent to $40,000 on average per participating village. Of that total, more than $3.7 million (30 percent) resulted from women-led economic activities.

The Demand Management and Inter-Fuel Substitutions Options Component directly benefited some 250,000 families (30 percent) in the principal urban and peri-urban areas of the country, with a particular health (reduced indoor pollution) and time-saving benefit to women. It also benefited several hundred urban-based traders, including charcoal wholesalers, charcoal retailers, and stove artisans.

Key Actions: The World Bank will support client countries that want to set up a conducive framework for small-scale plantations and tree planting in farmland. In particular, it will support clients identify and tackle barriers to developing small-scale plantations and tree planting. These can include insecure land/tree tenure, limited technical knowledge and financial capacities of smallholders, and insufficient market information. Demands are emerging from a series of countries—for example, Colombia, Ghana, and Côte d'Ivoire- that are willing to encourage small-scale plantations: building on experiences in Southeast Asia and Sub-Saharan Africa, the WBG stands ready to support client countries' efforts in that direction. There are also opportunities for encouraging local private sector investment in plantation establishment: in the ECA region, partnership schemes are being developed between local private investors or user associations and state agencies to establish, manage, and harvest plantations and orchards on state land.

2.3. Support Sustainable Forest Value Chains

To respond to growing timber demand, diversifying the supply is necessary but not sufficient. Developing and securing access to markets is another key element. Taking value chains as an entry point focuses the attention on links to markets, which in turn can help create sustainable enterprises and contribute to growth. This opens opportunities for different types of enterprises to respond to different types of markets through different models.

Small and Medium-size Forest Enterprises

Small and medium-size forest enterprises (SMFEs) offer important opportunities to promote non-farm employment in rural areas, including for women, and to strengthen rural-urban links. SMFEs are the primary source of forest sector employment in most developing countries. In some countries, they can account for up to 80–90 percent of employment in all forest enterprises, both formal and informal, and contribute to a large share of the timber demand at the domestic level. They can be a means for accruing wealth locally, empowering local entrepreneurship, strengthening social networks, and engendering local social and environmental accountability.

However, SMFEs often face internal limitations (technical, organizational, financial) as well regulatory or bureaucratic hurdles, inadequate or biased policies, insecure operating environment or access to resources, poor market information, difficult access to credit, inadequate technology and advice, and poor infrastructure. These issues impede SMFEs from fully materializing their potential to grow, create jobs, and provide goods and services that benefit rural communities and the markets they serve (see Box 2.7).

Box 2.7. Competitiveness of the Community Forestry Enterprises in Mexico

In Mexico, some 80 percent of forests are owned by local communities and indigenous people, giving forestland ownership a strong social nature. In the last 25 years, numerous Mexican forest communities have managed to develop reasonably successful commercial community forestry enterprises based on timber and non-timber products. Some of these are among

the world's most advanced examples of commercial community forestry. Yet Mexico's forest resources are far from meeting their potential for alleviating poverty and contributing to local development and the national economy. And the large majority of forest communities globally run even less-advanced forest businesses.

A 2012 study, financed by PROFOR, evaluated the economic and financial viability, sustainability, and competitiveness of 30 community forestry enterprises in Mexico. The analysis showed that although most enterprises were competitive, high production costs associated with their remoteness and the low level of mechanization proved to be a constraint, and some enterprises were jeopardizing their long-term sustainability by overharvesting. The study informed policy actions undertaken by government to assist communities in improving their competitiveness.

Source: Cubbage et al. 2013.

Key Actions: Building on experience gained in some countries, such as Mexico, the WBG will give increasing attention to SMFEs and work on addressing the various constraints they face to unlock their potential to generate wealth and jobs. In particular, the WBG will join forces (GPs Environment and Natural Resources and Trade and Competitiveness as well as IFC and MIGA) to support the development of SMFEs, particularly tapping the investment and technical capacity needed to help them overcome their constraints (technical, organizational) as well as identify and access promising markets. As a starting point, three GPs launched a program of analytical work on SMFEs in early 2016, with PROFOR financing.

Private Investments in Forest Value Chains

In new and emerging economies, investments in the forest sector are usually integrated, covering the different links of the value chain from the production to the processing and the marketing (as a strategy to mitigate the risks). Such integrated value chains can take various forms: they can be exclusively managed by the investing operator or can build on partnerships with smallholders (out-grower schemes). If properly managed, partnerships between smallholders and large-scale operators can yield positive development results. However, while private financing is promising in developing countries, obstacles to investments (including high risks, real and perceived) have hampered a full materialization of the potential so far in most developing countries.[31]

Key Actions: The area represents a great opportunity for the various entities of the WBG to come together to support responsible investments in forest value chains. The WB can help establish investment environments conducive to investors, IFC can partner with responsible private sector investors to expand investment in forest value chain, and MIGA can mitigate potential risks associated with investments in the forestry sector. Under this Key Action area, the IFC will lead the WBG engagement in investing in integrated value chains:[32] This can involve small- and large-scale operators and can bring together communities and companies through partnership arrangements, build small and medium-size enterprises, or enable socially responsible corporate investments. Priority countries have been identified for this effort: Belarus, Colombia, Indonesia, Mexico, Mozambique, and Tanzania for forest/wood products and Brazil, China, India, Mexico, the Russian Federation, and Turkey for pulp and paper.

[31] However, as indicated in Chapter 1, there are signs of a changing trend with a growing part of the investments to commercial plantations going to southern countries. As of now, Latin American countries have benefited the most from this new trend.

[32] Only 10–20 percent of the overall IFC commitment in the forestry sector exclusively goes to the upstream segment of the forest value chain ("pure timberland").

III. Focus Area 2: Forest-Smart Interventions in Other Economic Sectors

Forests are part of a broader landscape. It would be unrealistic to assume that changes in forests would have no impact on other land uses and on people living in the landscape and vice versa. For example, forest loss can lead to increased erosion and silt loads in hydropower reservoirs. On the other hand, forests deliver ecosystem services that are essential to sustain growth in economic sectors such as agriculture, energy, and mining. Sustainably managed forests can deliver important revenue streams to national treasuries. To address the global forest challenge, forests would need to become an integral part of national development.

Acknowledging the interlinkages between forests and other land uses, the World Bank Group aims to support its clients' pursuit of a "forest-smart" development trajectory through an integrated landscape approach. Such an approach provides the organizing principle for investing in land use management, based on rational spatial planning and socioeconomic considerations (see Box 2.8). It clarifies the dynamics between various land uses, including forests, and is essential to successfully enhancing landscape productivity and resilience in a sustainable manner. Supporting "forest-smart" interventions will not only ensure that adverse impacts on forests and their biodiversity are avoided or minimized but will also proactively seek win-win solutions where both are fully integrated in the design of the interventions.

Box 2.8: The Sahel and West Africa Program (SAWAP): Example of an Integrated Landscape Approach

The Sahel and West Africa program (SAWAP) is a flagship for the integrated landscape approach. It uses a geographic and socioeconomic approach to connecting protected areas, forestlands, woodlands, agro-silvo-pastoral lands, croplands, and irrigated agricultural lands to help secure a robust mix of primary and secondary ecosystem services from the landscape mosaic while enhancing adaptive capacity and resilience to climate change. Through farmer-managed sustainable land and water management and natural regeneration practices, the program is expected to transform African drylands into more productive and resilient ecosystems—regreening the Sahel landscapes and helping communities build their resilience.

SAWAP, under the TerrAfrica platform, is a $1.1 billion flexible investment umbrella in support of the Great Green Wall Initiative, which is addressing land degradation in a region from Senegal on the Atlantic coast to Djibouti on the Red Sea. The program has under implementation 12 country-led, multisectoral investment operations in Benin, Burkina Faso, Chad, Ethiopia, Ghana, Mali, Mauritania, Niger, Nigeria, Senegal, Sudan, and Togo—allowing connectivity at the ecosystem, national, and regional levels. Notably, the program has also provided an opportunity to combine financing (IDA, GEF, FCPF, government contributions, and other trust funds) to build a comprehensive financial package—thus ensuring a long-term, programmatic, and coordinated approach to investing in both resources and ecosystems to address landscape priorities.

While the first Focus Area can be seen as the "traditional" WBG engagement in the forestry sector, this second investment area offers new perspectives and forms of engagement at a territorial level. This responds to a growing demand from client countries that are looking for new mechanisms to better understand and address trade-offs between land uses and to come up with integrated solutions. Under its new organizational structure, striving for multidisciplinary coordination to tackle complex development problems, the WBG is uniquely positioned to deliver on this ambitious agenda. Together with the Climate Change Cross-Cutting Solutions Area, the Sustainable Development Practice Group sets the foundation for bringing to client countries the best knowledge and technical expertise on planning and managing the interaction among various land uses (i.e agriculture, forestry/agroforestry, mining, energy, transport) in a multidisciplinary and coordinated manner. In addition, Focus Area 2 also provides an opportunity to pursue a coordinated public/private approach to forest-smart Investments, through an enhanced coordination between the WB, IFC[33] and MIGA.

[33] The IFC is recognized as a leader in biodiversity and ecosystem services management for the private sector through its revision of its Performance Standards in 2012.

The Forest Action Plan proposes a two-pronged approach to forest-smart interventions: an upstream and strategic analysis of potential trade-offs between economic growth and forest protection and a coordinated approach to deliver operations that fully embed forest dimensions in their design and implementation.

2.1 Inform Decision Making on Land Uses

In order for development to be forest-smart, decisions about investments in forests and in other economic sectors would need to be guided by comprehensive, *ex ante*, and robust information on potential trade-offs for forests, including opportunities for restoration. Avoiding unnecessary trade-offs would require, as appropriate and feasible, upstream analysis and strategic environmental and social assessments of proposed investment options and their potential impact on forests. This also enables the identification of additional development co-benefits that can be incorporated into planned interventions.

Forests as a Key Element of Sustainable Development Agenda

The World Bank Group aims to help client countries define a long-term development path that can be achieved without irreversibly jeopardizing their forests and the services they deliver. To do this, a good understanding is required of the true value of the standing forests and their biodiversity as well as of the land-use change dynamics at the landscape level. When externalities are actively addressed and managed, it is more feasible to find no-regret options or win-win solutions.

Key Actions: The WBG will continue expanding the use of analytical tools, notably through the WAVES initiative and natural capital accounting, to help assess the value of forest capital and its contribution to the national economy through the production of goods (timber and non-timber) as well as the provision of key ecosystem services that sustain the broader economy.

Specifically, the GP-ENR, with support from other GPs and in coordination with respective CMUs, will also develop a series of succinct but comprehensive Country Forest Notes on the status of forests and provide options to minimize the trade-offs on forests by assessing the potential adverse impacts of sectoral investments on natural forests but also by highlighting the opportunities for improved land use management, notably through restoration. Whenever possible, these notes will directly feed into the strategic diagnosis exercises conducted at the national level and will inform the WBG engagement in a priority countries. These notes will enable a more innovative and integrated upstream analysis of investments and policies, which seeks to deliver on a broader range of development benefits. A key objective of this strategic analysis is to define investment options that are not achieved at the expense of forests.[34] The strategy is to avoid locking countries into pathways that may lead to irreversible conversion of land, such as the destruction of natural forests. It also aims at identifying potential win-win options across sectors, including through the restoration of degraded forested lands.

[34] This upstream approach would be complementary to the rigorous application of the safeguards policy of the World Bank, which remains critical to identify, at the operational level, potential risks of investments to the environment, including forests, and to people.

These notes will build on the extensive knowledge generated through the preparation of the national REDD+ strategies that the World Bank is currently supporting in 38 countries[35]. It is expected that by 2020, at least 20 Country Forest Notes[36] would be prepared. Financing for these exercises will be leveraged from different sources, particularly existing forest-related trust funds (such as FCPF, BioCF, FIP and PROFOR) but also, when available, from the Bank budget.

Land Use Planning

Land use planning is a key exercise to maximize economic and environmental outcomes and reduce conflicts resulting from overlapping usage. Trade-offs among different sectors and within sectors need to be carefully assessed and clearly understood by stakeholders if they are to define management strategies at the territorial level through a continuum of various land uses that support productive activities while preserving the long-term capacity of natural capital to deliver goods and services. This calls for both a geographic and a socioeconomic approach to managing land, water, and forest resources in a sustainable manner. The approach requires long-term collaboration among land managers, land users, and other stakeholders to achieve the multiple objectives of economic growth and provision of ecosystem services while protecting human well-being.

In order to achieve effective land use planning, appropriate tools and capacities would need to be developed and applied to provide a comprehensive understanding of current and optimal land use options. Geospatial tools are already used by many sectors, but data are often not shared with other stakeholders nor integrated into comprehensive maps.[37] Decision-making processes thus often rely on partial and sometimes outdated information.[38] This results in many overlapping land uses, which may lead to conflicts. Cross-sectoral platforms and information sharing are prerequisites to foster integrated territorial landscape, defining clear boundaries across the various land uses. Innovative ICT tools can facilitate the integration of databases and equip governments and stakeholders with necessary tools to support land use planning.

Good land-use plans, should give particular attention to protecting high-value forests (in terms of biodiversity, watershed functions, carbon stocks, and cultural values, in particular). Optimally, economic development triggering forest conversion should be directed away from high-value forests. The land use planning exercise can help identify those forest areas that need to be preserved, the areas that can coexist with other land uses, and the areas that could potentially be converted into other uses. Spatial planning can also help gear the potential development of economic activities toward degraded lands. This is particularly relevant to the agribusiness sector where prioritization of agribusiness development on degraded lands could avoid costly and uncertain mitigation schemes needed to compensate for lost forest resources. Another key benefit of land use planning is the possibility to define aggregated biodiversity offset schemes. For sectors such as mining and infrastructure, impacts on high biodiversity forest areas are sometimes not avoidable. In order to achieve "net gains" of forest biodiversity and after avoidance and other forms of mitigation have been

[35] By 2020, it is expected that the World Bank will have supported the preparation of the national REDD+ strategies in more than 50 countries.

[36] The sequencing for the preparation of these Country Forest Notes will be based on the importance of the forests, the timeline of preparation of SCDs/CPFs, the pipeline of WBG projects and programs, and the availability of funding. In some cases, these notes will be prepared at the subnational level.

[37] Extractive sectors, for example, often have high-resolution information, including data on soil composition and water retention that can inform decisions in other sectors.

[38] In many countries, forest maps inadequately report the forest area, ignoring encroachment dynamics that lead to forest degradation and deforestation.

pursued, compensation of impacts through biodiversity offsets may be needed. But biodiversity offsets are expensive for any single private or public sector actor to implement alone. Through land use planning, the government can identify *ex-ante* "aggregated" biodiversity offset schemes.[39]

Key Actions: The WBG will support clients willing to better understand the interlinkages between the different land uses and to assess *ex-ante* the potential impacts (positive and negative) on forests so that decision-making processes related to spatial land use planning are better informed. Such strategic work has been conducted at the level of the Congo Basin (covering Cameroon, the Central African Republic, the Democratic Republic of Congo, Equatorial Guinea, Gabon, and the Republic of Congo) to project the impacts of various economic scenarios on forest cover on a 2030 horizon (see Box 2.9).

Box 2.9. Modeling the Deforestation Trends in the Congo Basin to Inform Policy Makers in Land Use Planning

The Congo Basin population is expected to double between 2000 and 2030 to 170 million. These people will need food, energy, shelter, and employment. Historically, deforestation rates in the Congo Basin have been among the lowest in the tropical rain forest belt. Local and regional development, population growth, and global demand for commodities are likely to increase deforestation and forest degradation in the Congo Basin. Although subsistence activities such as small-scale agriculture and fuelwood collection are currently the main causes of deforestation and degradation in the basin, new threats are expected to emerge.

During the period 2012–13, a study was conducted to analyze deforestation dynamics in the Congo Basin and the resulting greenhouse gas emissions by 2030. This study combined a modeling exercise with a qualitative analysis of trends in different sectors (in particular, agriculture and transport), and included a dialogue with experts from the region. The main results suggest that pressures on forests are likely to increase significantly due to a combination of various factors, including growing population, conversion into agricultural uses for major crops, and enhancement of road network.

The Congo Basin countries are now at a crossroads. They are not yet locked into a development path that will necessarily come at a high cost to forests. They can define a new path toward "forest-friendly" growth. The question is how to match economic change with smart measures and policy choices so that Congo Basin countries can grow while maintaining their extraordinary natural assets over the long term—in other words, how they can leapfrog the traditional dip in forest cover usually observed in the forest transition curve. A Series of recommendations has been discussed with Congo Basin countries representatives and is now assessed more in-depth at the country-level.

Source: Megevand et al. 2013.

The WBG will support its client countries in their efforts to build up land use planning as a key tool to maximize economic, social, and environmental outcomes. Such plans would clarify the various uses of lands (based on the most up-to-date information related to population settlements, the status of the existing forests, the level of degradation, and the potential productive capacity of the land). They would also contribute to reducing problems resulting from overlapping usage titles (and potentially conflicting land uses).

Such work on land use planning has also the potential to ease the IFC's work with private sector investments. Indeed, IFC's Performance Standard 6 requires mining, infrastructure, agribusiness, and other projects to achieve a "net gain" when affecting high biodiversity forest areas that are considered critical habitat. Net gains are difficult to achieve without *ex-ante* planning by governments to avoid impacts, as far as possible, on the highest biodiversity value forests in the landscape.

[39] Under this modality, public and private sector developments that affect forest biodiversity would pay into such schemes, as is the case with offsets banking in countries such as the United States and Australia. These can unlock business potential while identifying measures to conserve forest and biodiversity resources for the long term.

2.2 Deliver on Forest-Smart Operations

The very nature of forests (and their associated services) gives them a special place in the WBG portfolio that spans across many different Global Practices (such as Agriculture; Water; Energy and Extractives; Social, Urban, Rural, and Resilience (SURR); and Transport) (see Appendix A on Learning from Our Forest Portfolio). The cross-GP collaboration will support "forest-smart" interventions that will offer solutions to complex challenges related to potentially competing land uses, helping them define operational responses to multi-dimensions of rural development. Particular focus will be on:

- Ensuring that interventions in land-based sectors (such as agriculture, hydroelectric energy, extractive industries, and transport) are done in a "forest-smart" way—that is, they consider avoiding or minimizing their potential adverse impact on forests.
- Proactively seeking win-win solutions where forests and trees are fully integrated in the design of the operation and contribute to its objective of development, along with identifying opportunities for additional development co-benefits.

Key Actions: Per WB Safeguards Policies[40] and IFC Performance Standards, all projects are systematically reviewed early in the project preparation process for identification of potential adverse impacts on forests. Through our Safeguards policies and Performance Standards, the WBG is committed to ensuring that any adverse impacts are avoided to the maximum extent possible or otherwise minimized, mitigated, and offset wherever possible. In addition, through different trust funds, innovative tools are being developed to help task teams better understand the indirect and induced potential impacts on forests and thus design operations that fully embed this dimension (see Box 2.10). In Latin America and Caribbean, a knowledge platform has been developed to support Environmentally Sustainable Infrastructure Construction[41].

Box 2.10: New Tools to Inform Decision Making on Infrastructure—Example from Road Rehabilitation in the Democratic Republic of Congo (DRC)

Transport infrastructure in the DRC is among the sparsest and most dilapidated in the world. There is thus an urgent need to improve interprovincial as well as intra-provincial connectivity to promote trade and economic cohesion. Infrastructure investments in long-lived assets, such as roads, have the potential to shape the development of the DRC for generations to come. This suggests the need for careful planning and holistic decision-making tools that take account of the wide range of direct and induced impacts.

Transport, Economic Growth and Deforestation in the Democratic Republic of Congo—A Spatial Analysis developed a methodology to help planners make better informed decisions to identify trade-offs and maximize net welfare benefits. The approach draws from the state-of-the-art across a variety of disciplines—spatial (GIS) analysis, spatial econometrics, economic theory, and conservation biology—to create an approach and set of tools that can guide the location and level of investments by estimating benefits and environmental costs at a highly disaggregated spatial scale.

Source: Damania et al. 2015.

Beyond Safeguards and Standards, the WBG aims to promote forest-smart multi-sectoral programs: the new organizational structure, based on sectoral Global Practices (GP) and Cross-Cutting Solution Areas (CCSA), aims to enable effective delivery of multi-sectoral solutions tailored to country-specific needs. The interlinkages between forests and other sectors have been assessed in detail in some countries, for instance forest and agriculture (see Box 2.11), forests and roads in Democratic Republic of Congo (see Box 2.12), or

[40] Particularly OP/BP 4.04 on Natural Habitats and OP/BP 4.26 on Forests for the World Bank and Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources for IFC and MIGA.
[41] See at www.kpesic.com

forests and extractives in the Congo Basin and West African countries (see Boxes 2.13 and 2.14). It is expected that by 2020, the WBG would have supported about 10 countries in developing and implementing large-scale multi-sectoral programs promoting “forest-smart” development, mobilizing various sources of financing (IDA/IBRD, climate funds and other trust funds).

Agriculture & Water

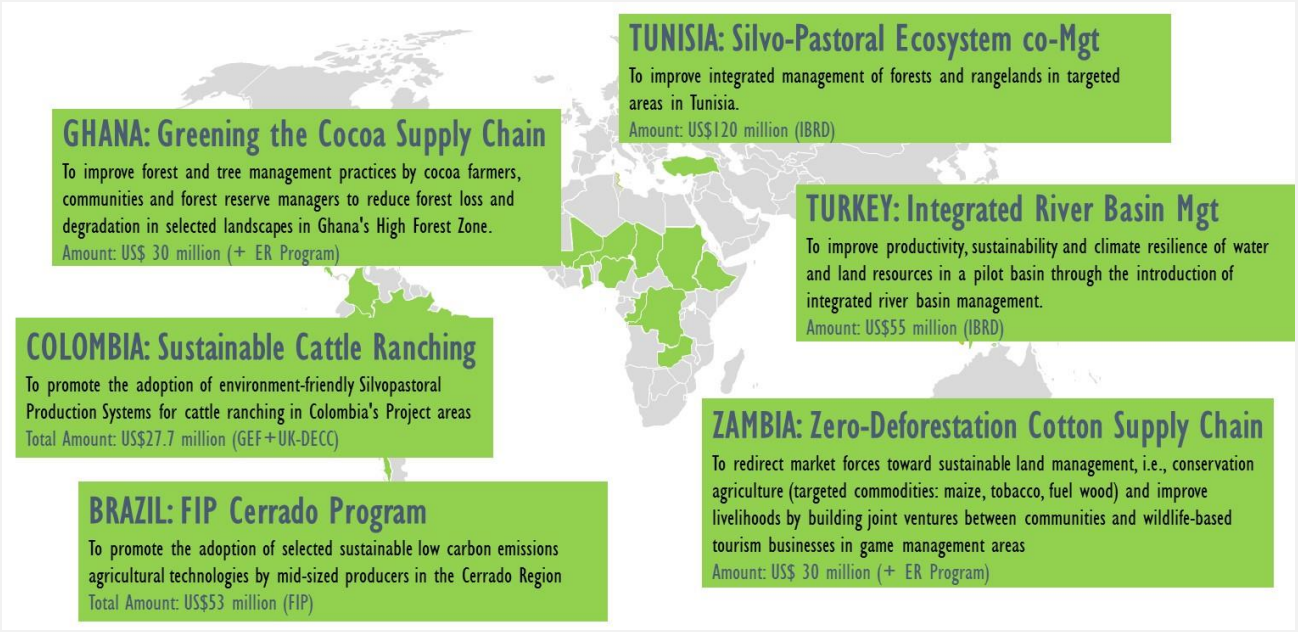
By 2050, the world will need to produce around 50 percent more food than it does now to feed the world’s estimated 9.6 billion people. Globally, deforestation has largely been driven by the demand for new agricultural land. Without significant structural changes in the way food systems are expanded in developing countries, this added burden of food production poses significant threats to the world’s forests. Forest loss brings with it biodiversity loss and disturbances to local and global water systems, which can put water supplies and food security at risk.

The fact that agriculture is the leading driver of deforestation globally has created a significant impetus for looking at "forests" much more broadly, through the landscape lens, as described earlier. The landscape approach blurs the traditional frontiers between farms and forests. Rather, through an integrated management of land and water resources, it fosters the vision of a continuum of various activities that are all interlinked and interdependent, spanning crop production, cattle ranching, land restoration, forest production, and protected areas. Under such a landscape approach, water is often the underlying element that guides decisions on land uses.

Key Actions: Over the past few years, the portfolio on integrated landscape management has grown significantly, building on the complementary expertise of various GPs and the climate change CCSA (CC-CCSA). It combines activities that aim to introduce trees in the farmland (through agroforestry and/or silvopastoralism) or to change agricultural practices so that they do not come at the expense of the natural forests (toward reduced or zero net deforestation). The WBG is currently preparing a series of landscape programs in about 20 countries (see examples in Box 2.11). Forests and trees are usually a key dimension of integrated landscape management. The interaction can be through the planting of trees (see the promotion of silvopastoral systems in Colombia or Tunisia), the reforesting of degraded river basins to restore key ecosystem services, or the transformation of key agricultural commodity value chains toward zero net deforestation. As the WBG becomes more engaged in this business line, it is expected that more models of interventions will arise as a tailored response to country needs. Demand is rapidly growing from client countries to deliver integrated solutions to rural development. Collaboration with GP Agriculture, GP Water, and GP SURR is central to delivering on this agenda, as well as with the CC-CCSA, as most of those programs are expected to have a “climate finance” window.

Box 2.11. Some Examples of the Growing Agenda on Integrated Landscape Management

The WBG portfolio on integrated management is growing rapidly, with about 20 active operations (under preparation/implementation) in Latin America (Chile, Costa Rica, Colombia, Mexico, and Peru), the Middle East and North Africa (Tunisia, Morocco), Africa (the DRC, Ethiopia, Ghana, Liberia, Mozambique, Republic of Congo), Southeast Asia (Indonesia, Lao PDR, Vietnam), and Europe and Central Asia (Turkey, Kyrgyz Republic, Kazakhstan). This map includes just a few examples of this approach.



Infrastructure (Transport, Dams, and Hydropower)

Through forest-smart investments in infrastructure, the WBG aims to minimize the potential negative impacts of infrastructure on natural forests (directly or indirectly through the economic activities it can stimulate) and to maximize the positive impacts of associated forest interventions ("green infrastructure").

Transport

One of the most important infrastructure investments in the developing world is transport, including roads, airports, rails, and seaports. Transport sector infrastructure investments are critical to improve the mobility of goods and people and to facilitate trade and commerce in an increasingly interconnected world. Furthermore, transport is an enabling infrastructure for other types of infrastructure. However, the provision and operation of transport infrastructure can come with significant negative impacts on forests.[42] While direct impacts (such as direct footprint or clearing land for the road or other transport infrastructure construction) can be easily identified and mitigated (through compensation plantations),[43] the indirect and induced cumulative impacts resulting from the boosting of economic activities in the areas served by transportation have a potentially much larger scope and are much more complicated to quantify.

[42] A 2013 World Bank study on "Dynamics of Deforestation in the Congo Basin" showed transport as the most robust predictor of deforestation.

[43] In many countries, compensatory afforestation is a requirement under the national laws.

The vast majority of the current transport portfolio of the WBG involves rehabilitation of existing surface transport infrastructure rather than the construction of new infrastructure. This is to maximize the use of existing infrastructure in terms of capacity, cost effectiveness/ efficiency. While rehabilitation investments may come with minimal direct impacts (due to pre-existing structures), they can drastically change the economic profile of the areas affected and generate significant induced impacts on the medium and longer term on natural forests. A recent study on the upgrading of existing roads (from very poor to good condition) found near complete deforestation within a narrow radius of about 1–1.5 km straddling the road (Damania, 2015, see also Box 2.10). The magnitude of these impacts, however, differs significantly, depending on the type of transportation mode (road, railway, fluvial) that is being improved.

On the other hand, cross-drainage investments are a major cost factor in transport projects like roads and rails, and appropriate forest management in the upstream catchments of stream and river crossings can reduce risks of erosion and landslides on linear transportation infrastructure. As for port infrastructure, siltation management in upstream catchments and enhanced management of mangroves and other coastal systems can significantly reduce adverse impacts in the event of coastal storms.

Key Actions: There are various ways to move transportation investments toward "forest-smart." Investments.

- At design stage, the use of Strategic Environmental and Social Assessments, building on spatial and economic prospective analysis, can be instrumental in modeling induced impacts on forests and identifying alternatives that could lessen such impacts. For instance, trajectories can also be adjusted to avoid high biodiversity–value ecosystems. Such an upstream analysis can also unveil options for multimodal network as an alternative to all-roads. SESAs should also seek to minimize forest fragmentation, which diminishes the resilience of forest systems and has an impact on certain types of biodiversity.
- When adverse impacts on forests and biodiversity have been identified, specific activities can be embedded in the operation design to mitigate such impacts. One example of good practice integrating the forest dimension into a transport infrastructure investment is the Pro-Routes Project for the DRC. This project shows how a constraint (sensitivity to the value of forest areas and forest-dependent communities) was turned into an opportunity for a more creative solution, bringing together experts from various sectors (see Box 2.12)
- Where appropriate, landscaping plans and investments can be added into infrastructure project design and implementation.[44] For example, in Kazakhstan a forestry project under preparation will help establish shelterbelts alongside new or improved roads. This will help reduce road maintenance costs by lessening the need for sand removal during summer and snow removal during winter.

Box 2.12. Pro-Routes Project in the Democratic Republic of Congo: An Example of Good Practice

The main goal of the project was to rehabilitate and improve approximately 3,000 kilometers of non-paved roads in the Democratic Republic of Congo, connecting several provinces (Equateur, Oriental, Maniema, Nord and South-Kivu, and Katanga) in the heart of the Congo Basin's pristine forest. This project incorporated fairly robust mitigation measures involving particularly close and proactive engagement with local communities. A whole component of the project was dedicated to

[44] Transport infrastructure investments in industrial countries usually include landscaping, shelterbelts, and tree planting programs on embankments and around bridges and intersections. These investments have a number of benefits in that they help stabilize the surrounding soil, reducing problems associated with erosion and runoff, while providing valuable green corridors, sequestering carbon, and providing eventual wood resources for local communities.

participatory land use planning and sustainable livelihood opportunities: it included participatory mapping of existing forest use, support for local initiatives for community forest income-generating activities, and agricultural intensification.

Source: World Bank, 2008 [45]

Dams and Hydropower

As demand for water regulation, irrigation and energy access increases, more investments in dams and hydropower facilities are being made in the developing world. These investments provide services to growing populations and economies, but they can impose significant tolls on forests. For example, in the case of large dams, the area of inundation can submerge forests, adversely affecting several of the services they provide.[46] The requirement to address this forest loss (such as through the planting and care of offset areas) varies widely across and even within countries. There can also be induced adverse impacts on forests from access roads or associated irrigation or transmission systems.

Investing in forests can help lengthen the life spans of these investments or lower their maintenance costs. The productivity and sustainability of investments in system storage (for example, for irrigation, water supply, or multipurpose dams or hydropower—both storage-backed and run-of-the-river) are intrinsically linked to the health of their catchments. Well-forested catchments[47] often provide many regulating ecosystem services in terms of erosion reduction, sediment management, and some attenuation of flood peaks through improved interception and infiltration into groundwater.[48] Deforestation, on the other hand, changes the catchment hydrology and can increase erosion, affecting their performance by reducing the effective storage and life of the dam as the sediment fills the live storage/pondage.

Key Actions: Most investments in dams and hydropower plants already come with catchment/watershed plans that identify activities for afforestation, reforestation, community woodlots, agroforestry, and so on, that can improve the relevant services provided by forests to the investments. Specific attention will be given to the actual implementation of those plans (with a more systematic monitoring). In addition, the GP-ENR, along with the CC-CCSA, will support task teams to identify potential innovative financing (such as for climate mitigation and adaptation or GEF) to enhance forest-related investments in the associated watersheds.

Wood-based Energy

Wood fuel represents the main source of energy to cook and sterilize food for about 2.4 billion people in developing countries and it is likely to remain so in future decades. In Sub-Saharan Africa,[49] estimates in the *World Energy Outlook 2010* predicted that by 2030 more than 900 million people might rely on wood-based biomass energy (IEA 2010). The principal use of wood fuels is by households for cooking and heating, although commercial and industrial use is increasing sharply (for example, in restaurants, bakeries, coffee and tea processing, the textile industry, and cement production). Representing 60–80 percent of total wood consumption in these countries, wood fuels often account for up to 50–90 percent of all energy used.

[45] Project Appraisal Document for the Pro-Route project (Report 40028-ZR)

[46] On the contrary, the adverse impact on forest is minimal in run-of-the-river hydropower systems or small dams in steep catchments.

[47] Forests are also a water consumer and need to be effectively managed, especially in arid catchments.

[48] Recent work by PROFOR in Albania showed that a dam established in 1958 was already more than 30 percent full of sediment and that, of the different land uses in the surrounding catchment, erosion was significantly reduced in areas of forest cover.

[49] In contrast to China and India, where the extent of wood-based biomass energy has peaked or will be peaking in the very near future, consumption of wood-based biomass energy is likely to remain at very high levels in Sub-Saharan Africa and may even continue to grow for the next few decades.

The wood fuel sector in many developing countries operates informally and inefficiently, using outdated technologies, which limits benefits to communities and delivers little official revenue to the government. The unsustainable harvesting of wood fuels to supply large urban and industrial markets can contribute to forest degradation and deforestation. Indoor air pollution caused by smoke from burning firewood is known to lead to severe health problems. The World Health Organization estimates 4.3 million deaths a year worldwide attributed to diseases associated with cooking and heating with solid fuels, with a particularly high toll on children and women[50] (WHO 2008). Traditional cookstoves are also an important contributor to climate change and account for more than 20 percent of global black carbon emissions.

Despite the fact that commercial wood fuel markets involve significant levels of finance and provide an important source of income through the supply chain, wood-based energy still does not receive the level of attention commensurate with the problem in most developing countries.[51] The situation is very different in other regions of the world where wood is now seen as a modern and efficient source of energy. Many countries in the EU and North America use wood energy in the form of chips or pellets where they can be a clean and carbon-neutral fuel alternative to fossil fuels.[52] With increasing demand for wood energy in industrial economies, the global trade in wood energy products, such as wood chips and pellets, has steadily increased in recent years.

Key Actions: The WBG aims to support modernization of the wood energy sector in developing countries. To do so, a coordinated approach is needed to transform this sector, and actions need to be taken all along the value chain: from promotion of sustainable production of wood to the dissemination of clean cookstoves. The GP-Energy, together with the GP-ENR and GP-Health, has recently launched a program on "Efficient, Clean Cooking and Heating" under the Energy Sector Management Assistance Program (ESMAP).

This area of intervention is of particular importance in Africa and South Asia. With the right blend of political will, carefully targeted technical and financial support, and a renewed focus on enabling frameworks, the next 5–10 years could be a turning point for the wood-based energy sector. The World Bank already has successful experiences on the woodfuel supply chain (see Box 2.6 on *Senegal: Sustainable and Participatory Energy Project (PROGEDE I)*). Important new developments include the emergence of new, cleaner cooking solutions (stoves and fuels), innovation in business models, and rising support for the clean cooking agenda from the public health community, governments, and development partners.

In countries in Europe and Central Asia, the WBG will continue supporting the expansion of the use of wood-based energy as an alternative and clean source of energy. In Belarus, for example, the Biomass District Heating Project ($90 million) is scaling up the efficient use of renewable biomass in heat and electricity generation by investing in biomass boilers and wood chipping equipment in some municipalities. This is complemented by the Belarus Forestry Development Project ($43.5 million), which is investing in modern harvesting equipment and wood chippers to increase the production of woody biomass from forests through

[50] It is the fourth worst overall health risk factor in the world, and second worst for women and girls (WHO 2008)

[51] However, this agenda is central to sustainable development objectives and cuts across many of the 2030 Sustainable Development Goals (SDGs), including SDG-3 on Health and Well-being, SDG-5 on Gender Equality, SDG-7 on Energy Access, SDG-8 Economic Growth and Employment, SDG-13 on Climate Change, and SDG-15 on Sustainable Forests.

[52] Belarus, for example, historically relied on imported coal, gas, and oil, but there is now an active program to meet heat and power needs from local renewable fuel resources, principally through expanding the use of wood fuel in heat-only boilers and combined heat and power plants.

utilization of currently under-thinned young and mid-aged forests and an increase in the use of felling waste for the production of woody biomass.

Extractive Industries

All forest-covered mining countries face existing and potential land use conflicts between mining, forestry, and conservation. Mining permits and forestry concessions often overlap. This is largely due to inconsistent levels of transparency and coordination across the natural resource sectors and the lack of clear land use planning at the territorial level. In addition, many foresters have found artisanal mining camps inside their concessions: despite a strong governmental focus on large-scale mining, the ASM sector is still by far the largest mining sector in most developing countries (in terms of employment, mostly informal) and can also conflict with forest activities.

While extractives industries can be confined to a specific geographical space, mining operations are often associated with other developments, in particular linear infrastructure, but also towns, hydropower dams, and so on that can put pressure on natural forests. When looking at the overall impact of mining operations on forest landscapes, it is important to go beyond traditional assessments of direct impacts and take an integrated landscape-level planning approach, which includes an analysis of the potential long-term and induced impacts on people and forests.

The responsible reclamation of mining sites offers an opportunity for reforestation by re-establishing productive forests on mined lands. Such activities can generate economic value for landowners and communities, as well as enhance environmental integrity by accelerating restoration of ecosystem services, such as watershed protection, water quality enhancement, carbon storage, and wildlife habitat.[53]

Key Actions: The WBG will continue to extend its analytical support to clients to inform decision-making processes on mining operations, including reclamation plans. A series of analytical work supported by the World Bank is already on-going, exploring innovative approaches to help developing countries optimize the use of their mineral potential without jeopardizing the forest capital or the rights and interests of communities. SESAs can also be instrumental in orienting the design of mining operations, as well as associated infrastructure (see Box 2.13).

Box 2.13: Promoting Forest-smart Interventions in the Mining sector—A Few Examples in Africa

The project *Balancing Mining Development and Forest Conservation in the Congo Basin* focuses on developing analytical tools and processes to help the government of the Republic of Congo develop a strategy for the sustainable development of the TRIDOM region—an area in the heart of the Congo Basin rich in mineral ore deposits and biodiversity. In the Democratic Republic of Congo, the World Bank is supporting the development of tools and standards for extractive industries on REDD+ and forest conservation to promote mitigation impacts through effective and efficient strategies to reduce GHG emissions from deforestation and forest degradation during exploration, exploitation, and rehabilitation activities.

The West Africa Minerals Sector SESA established a multi-stakeholder policy dialogue at the community, national, and regional levels. By developing spatial planning tools and emphasizing environmental considerations, such as preserving the integrity of the Upper Guinea Forest, as well as social considerations, such as increasing the transparency in access to land for mining activities, the SESA was able to create support for a regional approach to mining development in the Manu River Union.

[53] Although the process of mine reclamation occurs once mining is completed, the planning of mine reclamation activities should occur prior to a mine being permitted or started.

As mentioned earlier, the concept of aggregated biodiversity offsets is especially relevant to the mining sector. As the mineral resource is not movable, impacts on high biodiversity forest areas are sometimes unavoidable. The IFC's Performance Standard requirements for biodiversity are onerous for companies in countries that lack the enabling environment provided through the government. Aggregated offsets schemes would benefit the conservation of forest resources and would unlock business potential in many countries, notably in West Africa, where governments are aggressively pursuing mineral development with little regard to forests (see Box 2.14).

Box 2.14: A National Biodiversity Offsets Scheme: A Roadmap for Liberia's Mining Sector

In Liberia, the mining sector has the potential to become a significant engine for growth, reconstruction, and broader-based development. Yet it can also be a threat to the last extensive forest areas in West Africa. The Guinean Forest that runs through Liberia originally covered an estimated 1,265,000 square kilometers, but only one-tenth of the original vegetation remains.

In close coordination with Liberian forest and conservation authorities, the World Bank developed "A road map for a national biodiversity offsets scheme for Liberia, focusing on the mining sector." The report recommends the application of a common methodology be used by all (mining) companies to assure that the conservation offsets they are implementing are coordinated at the national level to increase their cumulative impact and to follow the national interest, rather than being done disjointedly on an investment-by-investment basis.

Source: Arrobas, 2015

The WBG aims to help client countries define an approach that fully realizes the potential of artisanal mining in an economically, socially, and environmentally sound manner so that it can contribute to both employment opportunities as well as state revenues, with minimized impact on the environment. In Gabon, Liberia, and Madagascar, for example, innovative approaches to engaging ASM communities that are operating in protected forest landscapes were examined to go beyond policies of expulsion and move toward sustainable management. As a result, there are fewer impacts on people's livelihoods and the environment. In Colombia and Brazil, the environmental management of artisanal mining sites was part of a Mining and Energy Technical Assistance. There is also an interest from some client countries, particularly in the ECA and AFR regions, to support reforestation to reclaim old mining sites and transform these areas into functional ecosystems.

IV. Cross-cutting themes

2.1. Climate Change and Resilience

Maintaining and/or restoring healthy forests is key to tackling the climate change challenge and providing a safety net for local communities, especially the most vulnerable groups of society. Climate finance has the potential to be transformational in terms of how forested areas are valued and used.[54]

Forests are now recognized as a key contributor to climate change mitigation through their capacity to sequester carbon out from the atmosphere. Scientific knowledge as well as methodological tools have built up over the past decade, which led to the formal inclusion of REDD+ in the 2015 Paris Agreement. As a

[54] The marginal cost of carbon sequestration with afforestation and forest management is estimated to range from $10 to $37 per ton of CO_2 along with substantial co-benefits, such as crop and soil improvement. Costs could be significantly reduced because of substantial co-benefits, such as crop and soil improvement (Stains 2010). This compares with proposed conventional carbon capture and storage technologies with first generation abatement costs of $120–180, declining to $35–70 per ton when technologies have matured (Al-Juaied and Whitmore 2009).

result, more than 90 countries included forest and land use changes in their Nationally Determined Contributions (NDC) to address climate change.

While the global community has focused in the first instance on reducing forest loss and degradation, more focus is now given on how to reverse these processes and build productive and resilient landscapes, which contribute to countries' development objectives while addressing the climate change challenge. Restoring degraded lands and enhancing the connectivity between ecosystems, including forests, will be critical to building productive and resilient landscapes.

Key Actions: The interventions proposed under this cross-cutting theme are fully aligned with the WBG Climate Change Action Plan. Over the past few years, the WBG has positioned itself as a key actor on forest-based climate change mitigation, mainly through the management of large trust funds such as the Forest Carbon Partnership Facility, the Forest Investment Program, and the BioCarbon Fund (for a total amount of more than $2 billion, see Table A.3 in Appendix A). The WBG will aim to maintain a leading role, particularly through piloting new intervention models and large-scale programs that promote the sustainable management of forest landscapes and contribute to low-carbon and resilient development trajectories in rural areas. IFC's Sustainable Business Advisory group will continue working directly with firms toward low-carbon business models.

More focus will be given to the contribution of forests and trees to the adaptation and resilience agenda to climate change. The Bank's portfolio already contains a certain number of large operations to restore forested landscapes, including drylands in the Africa region and degraded lands in Latin America. Many projects implemented under the Pilot Program for Climate Resilience support land management practices involving reforestation and tree planting. Growing attention is being given to protecting and restoring mangroves that enhance resilience to natural disasters and climate variability (in China and Bangladesh, for example). These operations can be seen as a triple win because they address the challenges of adaptation and mitigation and can generate economic opportunities through sustainable forest management.

These interventions usually demand high upfront investments and therefore require a long-term engagement and a solid financial plan. Through the programmatic approach, the WBG aims to offer a comprehensive technical and financial package that responds to clients' needs to pursue forest-smart development trajectories: such approach aims to support countries to drive transformative interventions in forested landscapes by blending TF resources (including climate finance) with IDA/IBRD resources as well as IFC investments into a more ambitious offer (see section on programmatic approach in Chapter 3). It is expected that by 2020, such programmatic approach would be piloted in about 10 countries.
The WBG is committed to tracking the impact of its investments in terms of GHG emissions. The Environment Strategy endorsed by the World Bank Board in 2012 requires the conduct of GHG accounting in World Bank investment projects. The World Bank in collaboration with other international financial institutions (IFIs) has adopted the IFI Harmonization Framework for project-level GHG accounting. Starting 1 July 2014, all forest-related investments operations are now subject to GHG accounting, and tools have been made available to teams to comply with this new requirement.[55]

[55] The CAT A/R and CAT SFM and Carbon Assessment Tool for Forest Fire Management (Fire-CAT).were consolidated into the Forest Carbon Accounting Tool (Forest-CAT) in 2015 for ex-ante GHG accounting in the investment projects targeting afforestation and reforestation and sustainable forest management activities. Ex ante Carbon Balance Tool (EX-ACT) developed by the FAO for GHG accounting in agriculture and forestry projects is another tool adopted for GHG accounting in the forestry projects

2.2. Rights and Participation

Clear ownership, access, and management rights over forests are vital for good governance and sustainable management of the resources. While most forests remain publicly owned, forest ownership by private actors, communities, and individuals has increased over the decades. A growing body of research also shows that the transfer of rights over forests (or forest use) to forest users creates effective incentives for improving forest conservation and management, with significant productivity and yield increases and with more equitable access to and ownership of forest resources. Forest dwellers can and will sustain or sustainably enhance forest productivity if they have long-term security for their access and user rights, a clear tenure situation, and access to affordable credit lines. Access to affordable finance allows forest dwellers to be engaged at different stages of the value chain—for instance, by adding value to timber and non-timber forest resources in the form of semi-finished or finished products that can be marketed at a higher price.

Interventions described under Focus Areas 1 and 2 can only yield full and long-lasting impacts on population welfare if rights of use and access to forest and trees are clear and secured. Uncertainties in these areas pose a significant constraint to their ability to manage these resources and to be involved in the value chain. Despite a growing recognition of the role women play in forest-related activities, they still face inequalities in terms of rights over forest resources, representativeness in relevant decision-making bodies, and access to credit lines. Empowering women in the forestry sector can create significant opportunities and generates important spill-over for households and communities.

Key Actions: A substantial share of the Bank's forest-related portfolio over the last decade has supported forest land tenure reforms, including significant shifts toward community-based forestland. Building on good experiences, the World Bank will work with clients willing to strengthen and expand local rights of use and access over forest resources, with a particular focus on indigenous groups. It will help them improve land tenure laws and regulations and modernize land administration systems. The focus on decentralized forest management and on community-based and participatory forest management will remain very strong across the WBG portfolio.

The WBG is mainstreaming citizen engagement in its interventions to give stakeholders the opportunity to fully participate in decision-making processes, with the objective of improving the intermediate and final development outcomes of the interventions (see Box 2.15). In line with this commitment, the WBG will support the effective participation of stakeholders in the land-use planning exercises to promote forest-smart development trajectories (as presented under Focus Area 2). Trade-offs among different sectors and within sectors need to be carefully assessed and clearly understood by stakeholders so that they can define development strategies at the territorial level (which could be subnational, national, or even regional). Such an approach requires robust socioeconomic analysis and strong coordination among line ministries as well as engagement with stakeholders.

Box 2.15: Strategic Framework for Mainstreaming Citizen Engagement in WBG Interventions

Citizen engagement is defined as the two-way interaction between citizens and governments or the private sector within the scope of WBG interventions—policy dialogue, programs, projects, and advisory services and analytics—that gives citizens a stake in decision making, with the objective of improving the intermediate and final development outcomes of the intervention. The spectrum of citizen engagement includes consultation, collaboration and participation, and empowerment. Access to information is a necessary enabling condition, but it typically implies a one-way interaction only. Information-sharing and awareness-raising activities alone, therefore, do not meet the definition of citizen engagement. Closing the feedback loop (that

is, a two-way interaction providing a tangible response to citizen feedback) is required to meet citizens' expectations for change created by their engagement and to use their input to inform improved development outcomes.

Source: Manroth, 2014.

Building on the 2015 WBG Strategy on Gender, emphasis will be given to mainstreaming the gender dimension in all forest-related interventions and to identifying opportunities to empower women. Since FY13, all forest-related operations have been gender-informed (by meeting one of three criteria: inclusion of gender in design, project actions, or monitoring and evaluation (M&E)). It is expected the forest portfolio will remain 100 per cent gender-informed, with the target of meeting all three criteria. The systematic screening of operations at design stage will help identify the various entry points that could be used to reduce inequalities between men and women in the forestry sector, including secure tenure on forest resources, participation to decision-making processes, and access to economic opportunities (see Box 2.16).

Box 2.16: PROGEDE II: Making Gender Equality a Core Element of the Project Design

PROGEDE I was implemented from 1997 to 2004 to combat Senegal's rapidly growing demand for household fuels and the degradation of forests and the rural environment. Despite the project's successes, some challenges remained with respect to the equal participation of men and women.

PROGEDE II was designed to build on important achievements under PROGEDE I but to also address the gender gap by including gender-equality goals in the project design. With the gender disparity in mind, PROGEDE II initiated a reform of these local management structures, which are referred to as CIVGFs (inter-village forest management committees). After a concerted effort, women now make up between 33 and 50 percent of these various structures. Furthermore, women increasingly participate in training sessions on forest cutting and carbonization techniques, pursuits formerly dominated by men in accordance with traditional gender roles governing the division of labor.

Source: Hammond, 2015.

In the forest sector, specific attention is given to indigenous peoples and forest-dependent communities. Successful platforms already exist, such as under the FIP and its Dedicated Grant Mechanism for Indigenous People and Local Communities (DGM) and under the FCPF Capacity Building Program. The work with indigenous peoples on forest-related issues complements the ongoing comprehensive dialogue launched in 2013 (see Box 2.17). Dialogue through these platforms is also complemented by concrete actions at the operational level, where particular attention is given to ensure that indigenous people and other forest dwellers directly benefit from WB operations[56].

Box 2.17: Comprehensive Dialogue between the World Bank and Indigenous Peoples

In March 2013, the World Bank Group embarked on the most extensive and comprehensive dialogue with indigenous peoples in its history in order to create a shared development agenda. This dialogue was held within the context of the Bank's safeguards policy to update and review process.

The World Bank's dialogue and engagement process have yielded promising results in terms of a renewed and stronger relationship between the Bank and indigenous peoples. The discussion revolved around critical issues for indigenous populations, including environmental and social protection, climate change, inclusion, self-determination, human rights, education, economic development, and health care. On 13–15 April 2015, 30 representatives of indigenous peoples from around the world held high-level meetings with the World Bank in Washington, DC, including Board members and President Kim, and proposed a platform to help chart the Bank's roadmap for a future partnership with them.

[56] In most forest-related operations, specific components/activities that directly target indigenous groups are embedded in project design.

2.3. Institutions and Governance

Over the last 25 years, forest management has improved dramatically through better planning, knowledge sharing, legislation, and policies.[57] Despite this positive trend, much remains to be done in developing countries to ensure that forest institutions have the necessary capacity to foster sustainable management of forests and that policies and regulations can respond to the challenges of the sector and be properly implemented. Forest governance remains a challenging agenda that requires actions at various levels and of different forms. Overall impacts on forest governance are usually the result of the combination of various factors (both local and global). Building on lessons learnt from the FY02-15 forest portfolio, the Forest Action Plan identifies areas of interventions where the WBG has a comparative advantage and can support client countries advance on this agenda.

Forest Policies and Institutions

The Forest Resource Assessment conducted by FAO in 2015 states that most developing countries have made significant progress in defining forest-related legislation and policies. However, many state-run forest agencies in developing countries still face major human and financial as well as organizational constraints in adequately responding to the many challenges related to the sustainable management of forests. In large parts of Africa, for example, the State has asserted rights over huge areas of forests but without the commensurate capacity to manage them. Conventional command-and-control measures have sought to limit human impacts on forests but often served only to regulate, collect revenues, and penalize "illegal" forest uses. As rural populations placed greater pressures on forested areas, and as competition from other commodities grew, these roles became somewhat insufficient. An integrated landscape approach would call for enhanced coordination with other line ministries (such as Agriculture, Mining, Energy) to promote forest-smart interventions.

Forest governance requires continuous focus. Despite noticeable progress over the past decade, the ever-rising demand for timber and other forest products presents a major risk of fueling illegal trade. Illegal logging continues to plague the forest sector. It is estimated to cost developing countries on the order of $5 billion per year in lost timber revenues to governments alone (Haken 2011; Goncalves et al. 2012). It also depresses prices and discourages legal operators.[58] It can drastically affect forest-dependent communities and can put the long-term viability of natural assets at risk. Impacts on biodiversity are also of major concern. Illegal activities undermine overall governance in many regions. Due to its value and scale, illegal logging is also a driver of wider systemic corruption.[59]

In order to respond to evolving contexts and emerging challenges, institutions need to constantly adapt and forest policies to be adjusted. In many countries, forest institutions are not optimally designed, staffed, or financed to be able to effectively manage large forest estates. New technologies are now available and can be largely used to enhance information on forests and guide decision making. Technological changes and declining costs in mobile devices, the Internet, and earth observation systems have made global information much more affordable and accessible. Many opportunities exist to use ICT to improve forest monitoring and

[57] FAO 2015.
[58] Estimates are that industrial hardwood timber of dubious origins may constitute 23–30 percent of global supply and that the availability of illegal supply depresses prices by 7–16 percent.
[59] See footnote 13.

forest management,[60] including timber tracking, chains of custody, forest cover monitoring systems, and budget management tools. Use of ICT can also significantly improve transparency and accountability and reduce the opportunities for collusion through the use of online auctions and sales systems.[61]

Key Actions: The WB portfolio has traditionally supported forest policies and capacity building of the forest agencies (or any other agencies in charge of forest affairs). This focus will continue but will take a slightly different form going forward in order to help client countries define an adequate policy framework to respond to new challenges related to sustainable forest management, as well as develop the technical and organization capacity to properly enforce policies and regulations.

Improve Policy and Regulatory Framework: Pressures on forests take different forms in different countries and change over different periods of time. Policies and regulations need to continually evolve in line with changing circumstances. Improving forest governance also consists of eliminating perverse incentives created through poor policy and regulation, as well as ensuring harmonization and cooperation across all relevant ministries and subnational agencies.

Hence, the WB will aim to support countries to adjust their policy framework to tackle the new challenges in a way that responds to their specific context. In some cases, the priority will be on land tenure security; in others, on simplifying existing regulations to facilitate sustainable business for the operators. In most countries, the articulation of forest laws/policies with other sectoral laws/policies constitutes a cornerstone for long-term preservation of forest capital. Such harmonization is at the heart of the ongoing efforts of the REDD+ strategy. In addition, strong focus will remain on supporting adequate enforcement of policies and regulations.

Modernize Institutions: As indicated in the *Global Forest Resources Assessment* (FAO 2015), while countries have made significant progress in establishing new policies and regulations, enforcement of the policies remains a challenge in most countries. This requires strengthened institutions that are able to forcefully track and tackle ever-changing forms of illegality and to promote sustainable uses of forest resources.

The WBG will aim to ramp up its assistance to forest institutions to help them broaden their interventions from only policing functions to a more comprehensive range of public service providers functions. The efforts on capacity building will extend to other line ministries to encourage the necessary coordinated approach on land use planning and management.

Use of ICT to Strengthen Country Information Systems: Tapping the potential offered by ICTs requires investments in information systems and analytical work. Technologies can enhance real-time knowledge of forest resources, help identify overlaps in land uses and conflicts that may emerge from them, and thus guide better decision making on resource allocation/uses. They can contribute to enhanced transparency in collecting and availing reliable data on forests.

The World Bank will continue to help countries build up robust monitoring systems that produce reliable forest-related data and information to promote sustainable management of forests. Special attention will be given to early warning systems that can drastically reduce the adverse impacts of

[60] Availability of earth observation data has improved significantly in recent years: this allows forest agencies to obtain information that would have been either inaccessible or prohibitively expensive only few years ago. Processing this information has its own costs, but free access to primary data reduces costs notably.

[61] For example, the Belarussian Universal Commodity Exchange is an electronic market open to national and international buyers for online real-time auctions for standing timber, cut at roadside, or as finished products. Since its inception as a purely timber market, it has been further expanded to include agricultural and mineral products.

fires or diseases. Cadasters are also in great demand from client countries to help them define land use in an optimal way and reduce conflicts. In addition, the WBG will continue its collaboration with international space agencies, in particular with the European Space Agency, to support the development of forest monitoring systems in client countries.

Mobilization of Public Resources

Due to the absence of economic value estimates of forest ecosystem services, the current National Accounting Systems of most developing countries reflect only the marketed value of forests. So a whole array of ecosystem services are not accounted for in the current calculus of national accounting and GDP, grossly underestimating forest contribution to the national economy. This is in turn reflected in terms of low budgetary allocations to the forestry sector, as intergovernmental and intrastate fiscal transfers give considerable weight to marketed benefits. This results in chronically underfunded forest departments and forest administrations that in turn are not in a position to appropriately exercise their mandate. In many cases, forest institutions depend on donors to cover basic budget needs.

Key Actions: The WBG will aim to help countries to better understand the true economic value of standing forests so that they can determine appropriate budget allocations for the forest sector. This will help inform decisions on public resource allocation and position forests as a priority sector for investment in order to sustain long-term growth. The WBG will be building on the extensive work done by WAVES on Forest Accounting to illustrate the overall value of forests beyond marketed value. It will aim to work with client countries on innovative arrangements that would mainstream environmental sustainability into the core fiscal process. Such an approach can be strengthened in phases to achieve the desired balance between environment sustainability and economic growth in the region.

V. Monitoring Progress with Implementation of the Forest Action Plan

Monitoring the Forest Action Plan will align with the WBG's overall Scorecard and will accordingly report on three Tiers.[62] Tier I reports on the long-term development outcomes that countries are achieving, Tier II reflects the results reported by WBG clients implementing WBG-financed operations, and Tier III covers operational and organizational effectiveness (see Table 2.1). The systematic use of Sector Core Indicators will allow for aggregation of the results and impacts at the program level. Details on the indicators and monitoring modalities are presented in Appendix B. Progress toward implementation of the Forest Action Plan will be annually reviewed and a midterm review is planned for FY18.

[62] The World Bank Group Corporate Scorecard provides a high-level and strategic overview of the WBG's performance toward achieving its corporate goals. It is the apex from which indicators cascade into the monitoring frameworks of the three World Bank Group institutions (see http:// corporatescorecard.worldbank.org).

Table 2.1: Tracking Performance of the Forest Action Plan

<table>
<tr><td rowspan="4"></td><td>WBG Development Outcomes
(10–15 years)</td><td colspan="3">End extreme poverty and boost shared prosperity
in a sustainable manner</td><td rowspan="2">Tier I
Long-term development outcomes</td></tr>
<tr><td><u>Forest Action Plan</u></td><td colspan="3">Tap the potential of forests and trees to contribute to WBG goals
of ending extreme poverty and boosting shared prosperity
in a sustainable manner</td></tr>
<tr><td>Programs / Projects</td><td>Focus Area 1:
Sustainable Forestry</td><td>Focus Area 2:
Forest-Smart Interventions in Other Sectors</td><td>Crosscutting Themes:
Climate Change & Resilience
Rights & Participation
Governance & Institutions</td><td rowspan="2">Tier II
Results reported by WBG clients implementing WBG-financed operations</td></tr>
<tr><td colspan="3">Aggregation from project/program level, using core sector indicators</td></tr>
<tr><td>WBG Delivery Model</td><td colspan="3">Programmatic approach that combines various instruments (technical assistance, investment, performance-based payments) supported by a mix of financing sources (IBRD/IDA, TFs, IFC) wherever possible. For other countries, project approach will be maintained.</td><td>Tier III
Operational and organizational effectiveness</td></tr>
</table>

CHAPTER 3. Implementation of the Forest Action Plan FY16-20

Chapter Summary

This chapter describes how the Forest Action Plan will be implemented through five main entry points: (i) strategic assessment of forest-smart options, (ii) programmatic approach, (iii) enhancement of the monitoring systems, at the operation-, country- and global levels to better track results on forests, (iv) knowledge generation to improve decision-making process related to forests, (iv) institutional adjustments to ease the delivery of transformative programs on forests and (v) partnerships to maximize impacts on the ground. These entry points have been identified through an in-depth assessment of the WBG forest portfolio over the FY02-15 period as well as a detailed analysis of the emerging demands coming from the clients.

While implementing the Forest Action Plan FY16-20, the WBG will strike the appropriate balance between the country engagement to respond to clients' specific demands and the global engagement to generate evidence and pilot innovative approaches through trust funds.

I. Strategic Level: Upstream Assessments and Scoping

The World Bank Group aims to ensure that interventions in economic sectors (such as agriculture, transport, mining, and energy) are done in a "forest-smart" way. To do so, it will work across sectors to help countries identify, evaluate and deploy transformational investments that effectively incorporate forest dividends and limit externalities. The goal is to avoid locking countries into pathways that may lead to irreversible conversion of land, including destruction of natural forests (as described under Focus Area 2 on "Support Informed Decision Making on Land Uses" in Chapter 2).

The Systematic Country Diagnostic and Country Partnership Framework instruments offer ideal platforms to identify the challenges and opportunities related to forests in a strategic and integrated manner within the World Bank Group and with country counterparts upstream in the programming process. The Global Practice for Environment and Natural Resources (GP-ENR), which leads the work on forests, is committed to the preparation of Country Forest Notes.[63] As noted earlier, these succinct but comprehensive notes will present the status of forests and provide options to minimize trade-offs by assessing the potential adverse impacts of sectoral investments on natural forests but also by highlighting the opportunities for improved land use management, notably through restoration. They will explore options to minimize the trade-offs of planned Bank interventions on forests by providing an innovative and integrated upstream analysis of policies and investments and their potential impacts on forests. These inputs will foster, in the medium and long term, a development model that aims to reconcile the economic opportunities (and needs) with healthy forest ecosystems. The upstream evidence-based considerations of various investment options can be used to guide the development of forest-smart projects and programs in a more consistent manner.

Financing for these notes will need to be leveraged from various sources and particularly from forest-related trust funds (such as PROFOR but also the FIP, the FCPF, and the BioCF). However, as the true value of forests is better understood by a range of stakeholders and partners, the expectation is that financing will be progressively made available from more sources (including from the Bank Budget). These notes will largely

[63] As indicated in Chapter 2, the sequencing for the preparation of these Country Forest Notes will be based on (i) the importance of the forests in the country, (ii) the timeline of preparation of SCDs/CPFs, (iii) the pipeline of WBG projects and programs, and (iv) availability of funding. In some cases, these notes will be prepared at the sub-national level.

use the extensive information data already available for many of the countries where forest operations are ongoing, in particular from the following sources (not exclusive):

- Forest accounts developed under the WAVES initiative
- Forest Investment Plans in FIP countries
- REDD+ strategies developed under the FCPF Readiness Fund
- Socioeconomic survey data collected through the Forest Module of the Living Standards Measurement Study
- Global Forest Resources Assessments, such as conducted by the Food and Agriculture Organization
- Country studies and other thematic studies, for example, financed through PROFOR and other partners.

II. Operational Level: The Programmatic Approach

The operational centerpiece of the *Forest Action Plan FY16–20* is a shift toward a new business model that aims to move away from the project-by-project and instrument-driven approach that has shaped the forest portfolio over the past few years to a more programmatic approach that would strategically position the WBG to support countries delivering on forest-smart interventions. This new business model responds to a concern raised by various Country Management Units about the proliferation of small-scale operations, with a lack of strategic vision on forest-related priorities in a specific country. The programmatic approach seeks to achieve greater strategic coherence in forest related interventions and simplify how a country accesses various sources of funding in support of the sustainable management of its forest landscapes. It also builds on the lessons learnt from the GP Finance & Markets that has pioneered this approach over the past few years.

While such a programmatic approach would likely be beneficial for all countries where forest landscapes are critical for sustainable rural development and economic growth, some countries do not yet have a conducive environment to engage programmatically in the short or medium term. In such cases the WBG will continue to support the forest agenda through projects as requested but will aim to provide the country a strategic vision of how a project-level engagement could leverage interventions at scale in the future. Historically, in some countries (see example of Mexico in Box 3.1), the WBG has started its engagement with small-scale, but strategic, projects that then helped build the basis for a strong investment portfolio with substantial resources over 5–10 years.

The programmatic approach is based on four main features as its foundations: a country-owned program, an appropriate mix of instruments, a cohesive financial architecture, and long-term engagement.

2.1. Country-Owned Program

The Programmatic approach will aim to support countries that consider forests as an integral part of their national development agenda and are willing to preserve forests in the rural landscape as a sustainable source of national wealth and prosperity while contributing to global priorities such as mitigating the impacts of climate change and conserving biodiversity. The programmatic approach will take into account, in a systematic way, the specific challenges and opportunities a country has identified in regard to forests, as well as their contribution to the national economy and to global public goods. It will support country-owned strategies that minimize trade-offs between, and optimize synergies with various interacting land uses (related to agriculture, energy, transportation, extractives, ecosystem services, and biodiversity). It will identify solutions that serve the diverse objectives of various stakeholders.

2.2. Appropriate Mix of Instruments

The WBG will aim to support its client countries with a menu of instruments (including technical assistance, Environment and Sector Work (ESW), Reimbursable Advisory Services, investments, policy loans, and results-based finance) in order to define the mix that best serves their needs. While the use of ESW and investments has traditionally been at the heart of WBG interventions in the forestry and related sectors, the emergence of climate finance for forests offers promising new avenues for leveraging additional resources to transform forested landscape at scale, including through results-based payments. Development Policy Lending (DPL) operations used to account for a significant share of total forest sector commitments financed between FY08 and FY10. They however no longer feature prominently in the Bank's forest portfolio. As governance and policy reforms still represent major challenges for the sustainable management of forests (see Chapter 2 on cross-cutting themes "Institutions and Governance", the GP-ENR will engage with Operations Policy and Country Services (OPCS) to identify constraints to WB support for forest-related DPLs. As of today, the forest portfolio[64] has not included any Program for Results (PforR) operation: it is expected however that this instrument could feature more prominently in the forest portfolio in the coming years, given the focus of the forest programs on results (including results related to climate benefits).

2.3. Cohesive Financial Architecture

The country-based program can be financed through the use of one or more financing sources from IDA/IBRD and climate and forest-related trust funds administered by the World Bank (BioCF, FCPF Readiness Fund and Carbon Fund, FIP, GEF or others) for which the World Bank is an implementing agency. Facilitating the ease of access to the various funds through a combined "financing package" that blend and sequence different revenue streams will allow the WBG to respond in a more coordinated and timely manner to country-specific needs for sustainable rural development involving forests.

"Forest-smart" interventions can come with an up-front investment cost higher than business as usual. Robust economic and financial analysis will be conducted to assess the long-term viability of such investments, as well as the long-term benefits in terms of, for example, lower maintenance and operation costs. Strategic partnerships with other stakeholders, such as bi- and multilateral organizations as well as the private sector, will be fostered to support forest-smart interventions and allow the crowding in of other finance and technical expertise in support of the program objectives. In addition, to encourage such interventions, World Bank lending instruments will be combined with climate and other environmental finance instruments: to do so, task teams will be encouraged to blend different sources of finance, including climate finance, into larger transformational operations. Work on the programmatic approach will be an important component of the World Bank Group's commitment to scaling up climate finance.[65]

2.4. Long-term Engagement

Experience has shown that natural resource–based interventions targeting impacts at scale are complex and need a long-term engagement strategy to achieve the desired results. To really be transformative, country programs usually need to be implemented over a time horizon much longer than the typical 3-5 year project lifetime, with support over a period more like 10-15 years, through complementary interlinked interventions. Such ambitious undertaking is already being piloted in selected countries where the World Bank has a significant involvement in the forest sector and sectors affecting forests and where there is a significant

[64] This refers to all operations that have been registered in the World Bank system with the forest code ("forest-tagged" operations).
[65] In October 2015, the WB committed to increasing from 21 percent to 28 percent its financing that goes to climate actions.

commitment from the government and other stakeholders to go beyond business as usual. This includes countries participating in the forest-related climate trust funds administered by the World Bank. Lessons from the process and implementation of these country programs will be gathered in a systematic manner and shared with interested countries and in international forums. The WBG already has supported such a programmatic approach in a few countries, such as Mexico (see Box 3.1).

Box 3.1. Making the Programmatic Approach a Reality: Mexico Forest and Climate Change Program

The World Bank has been supporting the forest sector in Mexico for the last two decades. Its supports evolved in terms of scope and amount to respond to specific needs: it started with an institutional support to the newly-created National Commission on Forest (CONAFOR) late 90s, shifted to the piloting of programs in the 2000s, such as the Program on Payment for Environmental Services or the Program on Community Forests that have since then become emblematic programs not only in Mexico but worldwide. The forest program in Mexico is today the largest WB program on forests, It is an example of a mature country program supporting sustainably managed forest landscapes. The objective of the program is to help rural communities to sustainably manage their forests, build social organization, and generate additional income from forest products and services, including from REDD+. The program is in implementation and so far has leveraged $460 million in Bank finance from various sources.

The program strives for results at an unprecedented scale by working across various sectors and bringing together various finance instruments in a coherent and coordinated manner. The program works in an area of 30 million hectares (about the size of Ecuador) and supports economic opportunities for 3,000 communities through sustainable forest management and piloting of innovative incentive schemes to reduce pressures on natural forests. Providing a package of various instruments and financing modalities, the WBG has been able to provide the government of Mexico with a comprehensive offer, building on large investments (heart of the program), good practices, innovation, and partnerships. The Bank with its convening power fosters dialogue across institutions and stakeholders.

WBG instruments: IBRD: Sector Investment Loan
FCPF Readiness Fund: grants
FIP investments: grants and credits
FCPF Carbon Fund: performance-based payments
Analytical work (PROFOR, Ford Foundation)

Financing: **TOTAL $460 million**
Readiness: $9 million (grant)
Investments: $392 million
(IBRD $350 million loan; FIP $16.44 million credit; $25.66 million grants)
Results-based finance: $60 million (TBC)

Other Partners: Inter-American Development Bank, French Development Agency, Ford Foundation

III. Strengthen Monitoring Systems

Monitoring the performance of the WBG forestry portfolio needs to be further improved to build a strong evidence base on the impacts of the investments. The *Forest Action Plan FY16–20* proposes that actions be taken at three levels: first, improving the capacity of the WBG to monitor progress toward achieving results and to evaluate impacts of interventions; second, building developing countries' systems to monitor and report on the status of their forests; and third, enhancing forest-related data in global monitoring systems.

3.1. Results and Impacts of Operations

The review of the FY12-15 forest portfolio revealed significant weaknesses in reporting results and impacts of the forest interventions in particular an uneven use of indicators across the portfolio, and the challenge of capturing impacts that materialize beyond the lifetime of specific operations. CODE made the enhancement

of the quality of the Monitoring and Evaluation of paramount importance. To do so, the FAP identifies different activities that should complement and reinforce each other to enhance the quality of the Monitoring and Evaluation frameworks of upcoming operations: (i) systematic use of Core Sector Indicators, (ii) inclusion of Predictive Proxy Indicators and (iii) use of impact evaluations.

Systematic Use of the Core Indicators across Sectors

Several core sector indicators and related guidance notes for World Bank operations, including forests investments and other investments, were launched in July 2012 and updated in 2014.[66] The systematic use of core sector indicators in projects and programs on forests will allow the aggregation of results at the portfolio level and a more realistic reporting of achievements and funding volumes. There is a renewed commitment to the rigorous application of these core sector indicators in the results framework of forestry and forest-relevant operations to overcome past inconsistencies. This will enable aggregation of results at the portfolio level in the future.

Key Actions: From FY16 on, operational teams will be required to systematically apply core sector indicators to operations in forestry and relevant sector interventions. Appendix B provides guidance for the use of relevant core sector indicators that should be included in each project/program as they correspond to the relevant investment areas of the Forest Action Plan.

Inclusion of Predictive Proxy Indicators

Most project indicators (even core sector indicators) used in the project results framework are mainly output-driven and tend to fall short in providing sufficient levels of information to predict longer-term forest sector outcomes. In response to the IEG review of the 2002 Forest Strategy, CODE urged the WB Management to develop a set of Predictive Proxy Indicators[67] (PPIs) that could be included in project Results Framework and that would provide a robust enough predictive value of longer-term impacts.

The research on forest sector PPIs conducted by PROFOR identifies a set of PPIs with the potential not just to measure the impacts of forestry programs on poverty reduction and economic growth, but also on other important development outcomes, such as biodiversity conservation, climate change mitigation and adaptation, and good governance (see Box 3.2). Identified PPIs have been included in recently-approved operations on forests[68].

Box 3.2. A Crystal Ball for Forests: Using Today's Indicators to Predict Tomorrow's Impacts

As forests are gaining more and more attention, there is a need to better understand the linkages between policies/investments and impacts on the ground. This proves to be particularly difficult in the forest sector: First, forest-related interventions are usually complex, with forestry policies, programs and projects often including multiple objectives, requiring the integration of socioeconomic and ecological expertise, and entailing processes that unfold over different spatial scales. Second, such interventions often take a long time to show results. For example, the results of investments in thinning, tree stand improvement or natural regeneration under sustainable forest management are unlikely to be evident for 10 to 30 years. These characteristics make attribution of impacts to specific interventions (as opposed to other potential factors) especially difficult within the forest sector.

[66] See http://intresources.worldbank.org/INTOPCS/Resources/380831-1177599583121/3719948-1248469457617/6332446-1412776252855/CoreSectorIndicatorsList.pdf.

[67] Predictive Proxy Indicators (PPIs) are often used in other fields: for example, education level is widely used as a predictor for future earnings but use of PPIs is a new development for the forestry sector.

[68] Most recently the Argentina Forests and Community Project.

Building on an in-depth review of the WB portfolio of forest operations from FY02-15 and statistical analysis, the PROFOR activity concluded that PPIs do exist and can be used in practice in forest-related interventions: the report presents a list of top ranking indicators based on an assessment of their predictive potential and their SMART score (these indicators are presented in an indicator menu organized by major objective (poverty, biodiversity, climate, or governance) and including brief notes on how they might be used). The report however highlights that there is no standalone "silver bullet" predictive proxies. However, a major conclusion is the idea that multiple indicators considered together, can have strong predictive potential. The report describes a series of seven indicator clusters that form PPIs: to maximize the accuracy of their predictive power, each PPI is composed of a cluster of indicators that, taken together, was determined to have strong predictive potential. In addition, each PPI cluster is based on a plausible theory of change that explains why the PPI was likely to predict a certain outcome as a result of an intervention. Encouragingly, the Core Sector Indicators (CSIs) already used by the World Bank have strong potential as PPIs, meaning that CSIs can help to capture not only end-of project outcomes, but also longer-term impacts of forest investments, and in a consistent way across countries and contexts.

Source: Miller, 2015

Key Actions: Teams preparing new forest-related operations will be encouraged to include PPIs in their Results Framework. More work will be done on this theme and particularly on the analysis of the causal chain so that PPIs can be constantly strengthened.

Impact Evaluations

The use of impact evaluations will be encouraged as part of project design. Impact evaluations, when used systematically, as in the health and education sectors, provide a strong evidence base of the results chain and conditions for success. Impact evaluations also provide opportunities for learning during project implementation and at completion and thus contribute to the continuous improvements of WBG interventions.

Key Actions: Task teams working on forestry operations will coordinate more systematically with Bank evaluation teams (for example, the Development Impact Evaluation DIME) to include an impact evaluation from the onset of the preparation process.[69] Practice managers in other GPs will encourage all teams preparing an operation that may have impacts on forests to assess the possibility for including an impact evaluation as early as possible, ideally at the design stage of the operation to ensure real-time learning.

3.2. Country Monitoring Systems

Many World Bank interventions include activities aimed at building up the monitoring capacity of developing countries or that co-finance country monitoring systems to make them robust and reliable sources of data and information on forests. In particular, through the FCPF Readiness Fund, the World Bank is supporting 40 countries in developing or enhancing country systems to monitor forest cover and associated GHG emissions, through measurement, reporting, and verification systems. Once in place, these country systems allow the government and other relevant stakeholders to monitor and report on the status of their forests and results in a consistent and transparent manner.

Key Actions: As indicated in Chapter 2 on "Institutions and Governance," the WBG will continue supporting the strengthening of clients' capacity to generate and monitor forest-related information in a robust and reliable manner. Under the FCPF Readiness operations, it provides support to almost 40 countries in the construction of their Monitoring, Reporting and Verification (MRV) systems. As more and more ICT options

[69] In FY15, two impact evaluations were approved in the context of two forest operations: one on the recently approved Argentina Participatory Forest Management project and the second one on the Mexico Forest and Climate Change project.

emerge and data are made publicly availability, the World Bank will provide technical guidance to clients on how to build up their forest monitoring systems to best respond to future needs, particularly in the context of REDD+ under the UNFCCC.

3.3. Global Monitoring Tools

Forest-Related WDI Indicators

The World Bank's adjusted net savings indicator, published annually in the *World Development* Indicators, builds a comprehensive set of capital assets that constitute a nation's wealth base, including natural resources such as forests. In addition to the forest rents, the *WDI* annually publishes an indicator on Net Forest Depletion that measures the value of timber extraction (including roundwood and fuelwood) that exceeded the natural incremental growth of productive forest area in the country for a given year.[70]

Key Actions: In addition to working on improving the estimates of these current two forest-related indicators, the Environmental Economics team in the GP ENR is working on improving the estimates of forest rent, net forest depletion, and timber wealth by developing a methodology for more accurate estimates of timber prices and updated estimates of timber rental rates. Their focus is also on valuing the benefits from key forest ecosystem services based on a meta-analysis of the valuation literature, including a methodology for scaling up spatially explicit values to the country level. With enhanced indicators, the WDI will report more-accurate information on the forest contribution to a nation's wealth.

A Forestry Module in the Living Standards Measurement Study

A forestry Module has been developed under the Living Standards Measurement Study, which was established by the Development Research Group to explore ways of improving the type and quality of household data collected by statistical offices in developing countries.[71] The specific module on forests was piloted in Indonesia and Tanzania during the second semester of FY15. A "Sourcebook on the Design and Implementation of Forestry Modules in LSMS-ISA" will be developed in early FY16 to provide countries with practical recommendations on different options to strengthen forest and tree-related data collection.

Key Actions: The rolling out of the Forest Module under the Living Standards Measurement Study will enable countries to collect and use socioeconomic data related to forests in a systematic manner through the use of structured surveys. WB forestry interventions will include, where appropriate, a capacity-building activity for forestry departments, statistical offices, or other appropriate institutions on the use of the module.

IV. Strengthen Knowledge and Evidence Base

4.1. Knowledge That Respond to Our Clients' and Global Challenges

The portfolio of analytical and knowledge work will be aligned with the focus areas and cross-cutting themes identified in the Forest Action Plan and (described in Chapter 2). When prioritizing knowledge products, the WB will strike the appropriate balance that responds to country-specific and global needs. It will combine various sources of financing, including trust funds to advance knowledge on global issues that can then in turn enhance the quality of the engagement at the country level. Over the next five years, however, there will

[70] See http://data.worldbank.org/indicator/NY.ADJ.DFOR.GN.ZS.

[71] The Living Standards Measurement Study (LSMS) is a household survey program developed by the World Bank focused on generating high-quality data, improving survey methods, and building capacity. The goal of the LSMS is to facilitate the use of household survey data for evidence-based policy making.

be opportunities to adjust or change these themes to ensure that knowledge products are fully aligned with operational business lines.

- Forests as pathways out of poverty: Deepen the understanding of the forest-poverty nexus and the contribution of forests as potential pathways out of poverty: this analytical work will be supported by PROFOR and will build on a series of cases in various countries. .
- Commercial reforestation: Assess the potential of commercial reforestation as an economically, socially, and environmentally sound solution to increased timber and pulp demand.
- Sustainable value chains and competitiveness: Identify opportunities to unlock the potential of forest value chains to generate jobs and economic opportunities (including for SMFEs).
- Land use change dynamics: Better understand the interlinkages between forest cover and other land uses, with a particular focus on the trends in major agricultural commodities production (palm oil, soybean, beef, coffee, and so on) and big infrastructure development.
- "Forest-smart" development in Agriculture, Transport, Energy, Extractive sectors.
- Contribution to climate change mitigation and adaptation: Assess the potential of the full forest product cycle to mitigation (through the promotion of long-lived durable wood products) and the contribution of forests and their biodiversity to enhanced resilience and productivity at the landscape level.

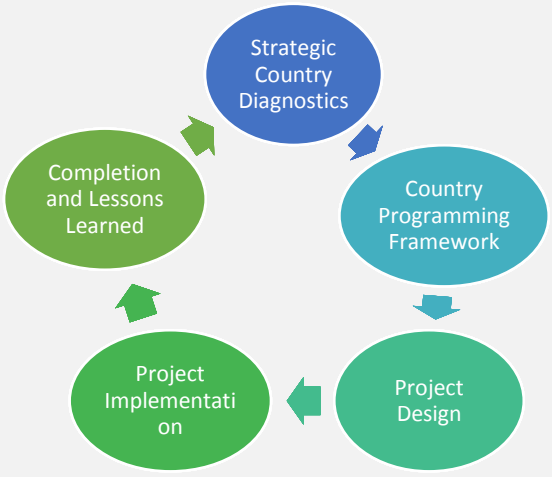
4.2. Learning as a Key Element in WBG Country Engagement

Systematically generating and using knowledge is an integral part of World Bank interventions and a core element of the different stages of its country engagement—from early policy dialogue to completion of the interventions (see Box 3.3). Generating lessons and using knowledge is imperative to making interventions more robust and successful and to ensuring long-lasting results.

Box 3.3. Knowledge and Learning: A Key Element All Along the Project Cycle

Knowledge is a strategic resource of the World Bank as it reflects the comparative advantage of a global organization with deep technical reach. The World Bank is uniquely positioned to collect, integrate, use, and transfer the knowledge gained from new research or from the design and implementation of operations around the globe.

Through the design and implementation of projects, knowledge capabilities and resources are built up in the World Bank and with clients over time. This knowledge finds entry into project design and enhances the likelihood of a successful outcome of the operation. This can take various forms: economic and sector work and impact evaluations. They are embedded in the project cycle and can respond to specific needs. This knowledge base helps to inform the preparation of country documents, such as the Systematic Country Diagnostic and Country Partnership Framework.



As described earlier in this chapter, the Country Forest Notes will present an upstream analysis of threats to forests as well as opportunities for socioeconomic growth in the forest sector and will directly feed into the SCDs, in order to then be reflected in the CPFs. Such an approach would ensure that future investments in

agriculture, hydroelectric energy, oil and gas extraction, mining, and transport consider avoiding or minimizing their potential adverse impact on forests. It is proposed to make CPFs forest-smart.

At the operational level, the performance and learning reviews will identify and capture lessons, determine midcourse corrections, and help build the WBG's knowledge base. Completion and learning reviews will identify and capture end-of-cycle learning to contribute to the WBG's knowledge base and inform the update of SCDs and CPFs.

V. Streamline Institutional Arrangements and Procedures

To ensure a successful design and implementation of the programmatic approach, actions will be taken on the following aspects:

- Strengthening collaboration across GPs, CCSAs, and agencies, and building "One WBG Forest team"
- Streamlining Operational processing of programmatic engagements
- Streamlining relevant global funds hosted by the World Bank, including procedural and governing arrangements.

While some of these changes can be implemented in a relatively short time frame (for example, working across teams), others may require a longer dialogue before action can be taken (for example, alignment of trust funds, including governing arrangements).

5.1. Collaboration as "One Forest Team"

The successful implementation of the ambitious agenda presented in Chapter 2 requires task teams that understand the challenges and opportunities associated with an integrated forest and other land uses agenda, striving for multiple benefits. The necessary staff profile required for such ambitious operations ranges from expertise in forestry, landscape management, climate change (adaptation and mitigation), economics, governance, private sector engagement, or social issues to expertise in those sectors that will be addressed through forest-smart investments.

At the country level, the design and implementation of country programs will require multidisciplinary teams with members coming from various GPs, CMUs, and CCSAs. At the corporate level, the role of the Bank's Global Lead on Forests is to foster synergies across GPs and seek opportunities for enhanced collaboration at the country level. In many countries, experts from GP-ENR and CCSA-CC joint force to deliver on forest programs. Such cross-GP-CCSA collaboration is at the heart of the new Bank structure. IFC and MIGA will also be part of the WBG integrated offer by supporting investors that are willing to do business based on high social and environmental standards.

5.2. Operational Processes

The programmatic approach proposed under the FAP will aim to move away from the project-by-project and instrument-driven approaches that have shaped the forest portfolio over the past few years to a more programmatic approach that would strategically position the WBG to support countries delivering on forest-smart interventions. Building on lessons learnt from the GP Finance & Markets that has pioneered this approach over the past few years, the programmatic approach will seek to consolidate and streamline the

preparation and implementation processes of different operations under the same program. Some task teams have already piloted this approach for forest programs in a few countries[72], by preparing packages that encompass more than one operation: these packages conceptualize the overall long-term WBG engagement on sustainable forest landscapes at the territorial level (for example, in Ethiopia's State of Oromia, Zambia's Eastern Province, and Colombia's Orinoquia region) and describe the WBG instruments and financing modalities used to address the identified challenges in an integrated way and to allow for an optimal use of technical and financial resources. While the instruments and financing modalities may require separate internal decision processes, the consolidated packages would constitute the basis for the overall dialogue on forests with the CMUs and the clients; they would also provide for optimizing the number of decision points (concept- and decision-stage).

5.3. WBG-hosted Forest-Related Climate Trust Funds

At the COP-21 held in Paris, the governments of Germany, Norway, and the United Kingdom publicly expressed their support by pledging an additional $5 billion to be channeled through a variety of existing mechanisms, including relevant trust funds hosted by the World Bank.

Based on experience with various financing mechanisms, developing countries and other stakeholders—while recognizing the key contributions of trust funds to the forest agenda—have increasingly voiced concern about the proliferation of rules and procedures associated with different funds, making access to these funds slow and cumbersome. Through the programmatic engagement, the WBG will explore options for a more streamlined approach across these financial streams. It will work to align processing guidelines for new trust funds with standard Bank operational practices.

The WBG will also work with partners and donors to improve the effectiveness of the forest climate funds, to reduce transaction costs and increase impact. In the short term, it will work to improve country-level coordination, whereas in the medium term, it may need to work with partners toward rationalization of funds and financial innovation to improve performance of results-based instruments while addressing short-term investment funding needs.

VI. Partnerships

Since the adoption of the Forest Strategy in 2002, the Bank has fostered a number of important partnerships[73] and worked closely with the UN Forum on Forests (and the associated Collaborative Partnership on Forests) as well as with the Consultative Group on International Agricultural Research (particularly the Center for International Forestry Research and the World Agroforestry Center). The WBG is also an observer in various international fora, including the UN Forum on Forests, the UN Framework Convention on Climate Change, the United Nations Program on Reducing Emissions from Deforestation and Forest Degradation, and the UN Permanent Forum in Indigenous Issues. The WBG will continue to be an active partner in global partnerships that advance the dialogue on the sustainable management of forests.

[72] A Programmatic Concept Note for Colombia and a Programmatic Appraisal Document for Ethiopia.

[73] These include the WB-WWF Alliance, the Forests Dialogue, the Growing Forest Partnerships, the Global Partnership on Forests Landscape Restoration, and the Collaborative Partnership on Forests in support of the UN Forum on Forests. The Bank has also supported specific financing modalities for partnerships through the BioCarbon Fund, the Forest Carbon Partnership Facility, the Critical Ecosystems Partnership Fund, and, to a lesser extent, the Program on Forests.

In addition, the Bank hosts influential trust funds on forests, such as the BioCarbon Fund, the Forest Carbon Partnership Facility (FCPF), the Forest Investment Program (FIP) and the Global Environment Facility, that contribute to shaping the global forest agenda and support innovation.

Over the past decade, there has been a major effort to establish partnerships with civil society organizations and other groups. Platforms established under the FCPF and the FIP and its associated Dedicated Grant Mechanism for Indigenous Peoples and Local Communities, have deepened the Bank's engagement with a variety of stakeholders involved in the forest sector. Continuing dialogue and exchange with civil society and other groups will remain central to the implementation of the FAP.

Cross-sectoral knowledge activities undertaken by the Program on Forests (PROFOR), a multi-donor partnership hosted by the World Bank, will help guide forest-smart operations by focusing on the nexus between forests and energy, agriculture, poverty, jobs, mining and disaster risk management, for example. PROFOR is part of a global effort to improve knowledge sharing and results monitoring for more effective interventions in the forest sector. The Wealth Accounting and Valuation of Ecosystem Services (WAVES) also offers a venue for integrating natural capital in development planning, economic policy and decision making in support of forest-smart development.

To support its new business model, the WBG will place special emphasis on partnerships that can deliver operational support to client countries through coordinated efforts. The WBG already works with a wide range of stakeholders and partners at the country, regional and global levels.

For example, in many countries working on the REDD+ agenda, the operational teams are coordinating closely with partners involved in the forest sector to optimize their support to country programs.

At the regional level, different partnerships help the World Bank respond to client country priorities. For example, in the ECA region, a partnership between the World Bank, the World Wildlife Fund and the International Union for Conservation of Nature, with support from the European Union, works to improve forest law enforcement and governance in seven countries which together are home to more than 20 percent of the world's forests. In Sub-Saharan Africa, the World Bank is a partner of the TerrAfrica Partnership hosted by the African Union that helps countries to restore degraded land. The World Bank is also a member of the LAC 20x20 initiative that proposes to restore 20 million hectares of land in Latin America and the Caribbean.

At the global level, the WBG is a partner of the Bonn Challenge which aspires to restore 150 million hectares of degraded lands by 2020, and of the International Consortium on Combating Wildlife Crime on the wildlife crime, a collaborative effort of five inter-governmental agencies whose mission is to bring a coordinated response to wildlife and forest crime. The IFC works closely with sustainable commodity roundtables to find viable solutions to green commodity supply chains.

This list is far from exhaustive but points to the rich partnerships that strengthen the WBG's work on forests at all levels and will be instrumental in implementing the FAP.

Bibliography

Al-Juaied, M., and A. Whitmore. 2009. “Realistic Costs of Carbon Capture.” Discussion Paper 2009-08, Energy Technology Innovation Research Group, Belfer Center for Science and International Affairs, Harvard Kennedy School.

Angelsen, A., and T. Dokken. 2015. *Environmental Reliance and Climate Vulnerability: A Cross-Section Analysis of Structural and Stochastic Poverty*. Policy Research Working Paper. Washington, DC: World Bank.

Angelsen, A., P. Jagger, R. Babigumira, B. Belcher, N. J. Hogarth, S. Bauch, and S. Wunder. 2014. "Environmental Income and Rural Livelihoods: A Global Comparative Analysis." *World Development* 64: S12S28.

Arrobas, D., K. Hund, G. Ledec and S. Johnson. 2015. *Aggregated Biodiversity Offset; A Roadmap for Liberia’s Mining Sector.* Washington, DC. World Bank.

Asen, A., H. Savenije, and F. Schmidt, eds. 2012. *Good Businesses: Making Private Investments Work for Tropical Forests*. Wageningen: Tropenbos International.

Burke, E. J., S. J. Brown, and N. Christidis. 2006. *Modeling the Recent Evolution of Global Drought and Projections for the Twenty-First Century with the Hadley Centre Climate Model*. Journal of Hydrometeorology 7: 1113–25.

Chao, S. 2012. *Forest Peoples: Numbers across the World.* Moreton-in-Marsh, U.K.: Forest Peoples Program.

Croitoru, L., H. Daly, and T. Bennouna. 2015. *Towards a Sustainable Management of Forest and Rangeland Ecosystems in Tunisia: Analysis of Benefits and Costs of the Degradation of Forests and Rangelands*. PROFOR, World Bank and General Directorate of Forests. Tunis.

Cubbage, F., R. Davis, D. R. Paredes, G. Frey, R. Mollenhauer, Y. K. Elsin, I. A. Hernández et al. 2013. *Competitividad y Acceso a Mercados de Empresas Forestales Comunitarias en México*. Washington, DC: PROFOR, Comisión Nacional Forestal, and World Bank.

Damania, R., D. Wheeler. 2015. *Road Improvement and Deforestation in the Congo Basin countries*. Policy research Working Paper No 7274. Washington, DC. World Bank.

De Clercq, G. 2015. *Brazil Drought Could Cost EDP 150-200 Mln Euros in Core Earnings*. *Reuters*. June 2. http://www.reuters.com/article/2015/06/02/electricity-europe-edp-drought-idUSL5N0YO19H20150602

Elson, D. 2012. *Guide to Investing in Locally Controlled Forestry*. Growing Forest Partnerships, in association with FAO, IIED, IUCN, The Forests Dialogue, and the World Bank. London: International Institute for Environment and Development.

FAO (Food and Agriculture Organization of the United Nations). 2014. *State of the World’s Forests: Enhancing the Socioeconomic Benefits from Forests*. Rome.

———.2015. *Global Forest Resources Assessment. How Are the World’s Forests Changing?* Rome.

Forest Connect. 2015. At http://forestconnect.ning.com. Accessed June.

Global Forest Watch. 2015. “Brazil.” Washington, DC. Accessed June.

Goncalves, M. P., M. Panjer, T. S. Greenberg, and W. B. Magrath. 2012. *Justice for Forests: Improving Criminal Justice Efforts to Combat Illegal Logging*. Washington, DC: World Bank.

Guo, Z., Y. Li, X. Xiao, L. Zhang, and Y. Gan. 2007. "Hydroelectricity Production and Forest Conservation in Watersheds." *Ecological Applications* 17 (6): 1557–62.

Haken, J. 2011. *Transnational Crime in the Developing World*. Global Financial Integrity Program. Washington, DC: Center for International Policy.

Hammond, A, I. Schomer, A. Ngom, A. Seck and V. Janick. 2015. *Improving Gender Equality and Rural Livelihoods in Senegal through Sustainable and Participatory Energy Management: Senegal's PROGEDE II Project*. Policy Brief. Washington, DC. World Bank.

Ickowitz, A., B. Powell, A. Salim, and T. Sunderland. 2014. *Dietary Quality and Tree Cover in Africa*. Global Environmental Change 24: 287–94.

IEA (International Energy Agency). 2006. *World Energy Outlook 2006*. Paris: Organization for Economic Co-operation and Development/IEA.

———. 2010. *World Energy Outlook 2010*. Paris: Organization for Economic Co-operation and Development/IEA.

IEG (Independent Evaluation Group). 2013. *Managing Forest Resources for Sustainable Development: An Evaluation of the World Bank Group's Experience.* Washington, DC: World Bank.

IFAD (International Fund for Agricultural Development). 2010. *Rural Poverty Report 2011*. Washington, DC.

Ilstead, U., A. Malmer, E. Verbeeten, and D. Murdiyarso. 2007. *The Effect of Afforestation on Water Infiltration in the Tropics: A Systematic Review and Meta-Analysis*. Forest Ecology and Management 251 (1–2): 45–51.http://www.ifad.org/rpr2011/report/e/rpr2011.pdf.

Indufor. 2012. *Strategic Review on the Future of Forest Plantations*. Report prepared for the Forest Stewardship Council. Helsinki.

IUFRO (International Union of Forest Research Organizations). 2015. *Forests, Trees and Landscapes for Food Security and Nutrition—A Global Assessment Report*. IUFRO World Series Vol. 33. Vienna.

Lawson, S., and L. MacFaul. 2010. *Illegal Logging and Related Trade: Indicators of the Global Response*. London: Chatham House and the Royal Institute of International Affairs.

Lewis, T. 2015. *Drought Drives Up Brazil's Supermarket Produce Prices*. Wall Street Journal*,* February 6.

Locatelli, B., and R. Vignola. 2009. Managing Watershed Services of Tropical Forests and Plantations: Can Meta-Analyses Help? *Forest Ecology and Management* 258 (9): 1864–70.

Macqueen, D., S. Baral, L. Chakrabarti, S. Dangal, P. du Plessis, A. Griffith, S. Grouwels et al. 2012. *Supporting Small Forest Enterprises—A Facilitator's Toolkit. Pocket Guidance Not Rocket Science*! IIED Small and Medium Forest Enterprise Series No. 29. London: International Institute for Environment and Development.

Manroth, A.; Z. Hernandez, H. Masud, J. Zakhour, M. Rebolledo, S. Mahmood, A. Seyedian, Q. Hamad and T. Peixoto. 2014. *Strategic framework for mainstreaming citizen engagement in World Bank Group operations: engaging with citizens for improved results*. Washington, DC. World Bank.

Mather, A. 1992. The Forest Transition. Area 24 (4): 367-79.

Megevand, C., A. Mosnier, J. Hourticq, K. Sanders, N. Doetinchem, and C. Streck. 2013. *Deforestation Trends in the Congo Basin: Reconciling Economic Growth and Forest Preservation*. Washington, DC: World Bank.http://intresources.worldbank.org/INTOPCS/Resources/380831-1177599583121/3719948-1248469457617/6332446-1412776252855/CoreSectorIndicatorsList.pdf

Miller, D.C., C. Benson-Wahlén, 2015. *Understanding Long-Term Impacts in the Forest Sector: Predictive Proxy Indicators*. PROFOR Working Paper. Washington, DC: World Bank.

New Climate Economy. *Catalyzing International Cooperation for Growth and Climate Action*. Draft for Review.

——-. 2015. *Seizing the Global Opportunity*. At http://2015.newclimateeconomy.report.

Neilson, R., L. Pitelka, A. Solomon, R. Nathan, G. Midgley, J. Fragoso, H. Lischke and K. Thompson 2005. Forecasting Regional to Global Plan Migration in Response to Climate Change. BioScience 55 (9): 749-759. doi: 10.1641/0006-3568(2005)055.

Noack, F., S. Wunder, A. Angelsen, and J. Börner. 2015. *Environmental Income, Rural Poverty, and Adaptation to Climate Variability: A Cross-Sectional Analysis*. Working Paper. Washington, DC: World Bank.

OECD (Organization for Economic Co-operation and Development). *Creditor Reporter System: Agriculture*. Paris.

Oliver, C., N. Nassar, B. Lippke, and J. McCarter. 2014. Carbon, Fossil Fuel and Biodiversity Mitigation with Wood and Forests. *Journal of Sustainable Forestry* 33 (3): 248–75.

Preston, S. 2010. Consumer Goods Forum Plans to Tackle Deforestation and Other Key Drivers of Climate Change. *Guardian*. December 1. London.

Puzio, L. 2015*. Analysis of World Bank Finance and Forests: The Impact of Development Projects on Tropical Forests and Forest Peoples*. Washington, DC: World Bank Information Center.

RRI (Rights and Resources Initiative). 2014. Recognizing Indigenous and Community Rights: Priority Steps to Advance Development and Mitigate Climate. RRI Issue Brief 1. Washington, DC.

———. 2015. *Forest Tenure Data*. At http://www.rightsandresources.org/resources/tenure-data. Accessed January 23.

Russell, A. J. M., B. Locatelli, E. Pramova, G. J. Alumai, and D. Chandrasekharan Behr. 2012. *Using Forests to Enhance Resilience to Climate Change: What Do We Know about How Forests Can Contribute to Adaptation?* Working Paper. Washington, DC: PROFOR.

Seneca Creek Associates and Wood Resources International. 2004. *Illegal Logging and Global Wood Markets: The Competitive Impacts on the U.S. Wood Products Industry*. Prepared for the American Forest and Paper Association.

Shepherd, G. 2012. *Rethinking Forest Reliance: Findings about Poverty, Livelihood Resilience and Forests from IUCN's 'Livelihoods and Landscapes' Strategy.* Working Paper No. 4. Gland, Switzerland: International Union for Conservation of Nature.

Stains, R. 2010. *Storing Carbon in Wood A Cheaper Way to Slow Climate Change?* The Milken Institute Review. Cambridge, MA: Harvard University.

United Nations. 2013. *World Population Prospects: The 2012 Revision, Highlights and Advance Tables*. Working Paper No. ESA/P/WP 228. New York: Department of Economic and Social Affairs, Population Division.

———. 2015. "Draft Outcome Document of the United Nations Summit for the Adoption of the Post-2015 Development Agenda." New York. At http://www.un.org/ga/search/view_doc.asp?symbol=A/69/L.85&Lang=E.

UN-REDD. 2014. "New York Declaration on Forests." UN Climate Summit. At http://www.unredd.org/portals/15/documents/ForestsDeclarationText.pdf.

Verchot, L.. 2015. "The Science Is Clear: Forest Loss behind Brazil's Drought" (blog). Bogor, Indonesia: Center for International Forestry Research. January 29.

Vergara, W., and S. Scholz, eds. 2011. *Assessment of the Risk of Amazon Dieback*. Washington, DC: World Bank.

Watts, J. 2015. Brazil's Worst Drought in History Prompts Protests and Blackouts. *Guardian*, January 23. London.

Webster, P. J., G. J. Holland, J. A. Curry, and H. R. Chang. 2005. "Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment." *Science* 309: 1844–46.

WHO (World Health Organization). 2008. *The Global Health Burden of Disease*. Geneva.

World Bank. 2012. *Strategic Environmental Assessment in the World Bank*. Washington, DC.

———. 2014. *Private Financing for SFM and Forest Products in Developing Countries—Trends and Drivers*. Washington, DC: PROFOR.

——. 2015. "Adjusted Savings: Net Forest Depletion (% of GNI)." *World Development Indicators*. Washington, DC.
http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf?ua=1

Zhaoyin W., J. Lee, and C. S. Melching. 2014. *Dynamics and Integrated River Management*. Berlin/ Heidelberg: Tsinghua University Press Beijing and Springer-Verlag.

APPENDIX A. Learning from Our Forest Portfolio

Summary

Between fiscal years 2002 and 2015, the World Bank Group (WBG) invested a total of $6.5 billion in the forestry sector, which corresponds to an average of $465 million per year. Based on the latest Organization for Economic Co-operation and Development statistics, the World Bank ranks second in the list of official financiers of forest activities and first in the list of multilateral financiers. This share, however, remains small compared with private financial flows (about $15 billion per year).

Overall, the WBG forest portfolio has performed reasonably well against Bank-wide portfolio performance indicators. WBG investments have achieved significant milestones, including bringing 73.6 million hectares under participatory or community forest management, contributing to the creation of 24 million hectares of new protected areas, declaring 45.4 million hectares as indigenous lands in the Brazilian Amazon region, and bringing 8.9 million hectares under sustainable forest management plans. There is, however, room for improvement. In particular, the quality of monitoring and evaluation needs to be further enhanced to make the review of results and impacts achieved through WBG operations more comprehensive and robust.

Over the past 10 years, the WBG forest portfolio has significantly evolved in terms of the use of instruments. Development Policy Loans, which were frequently used during fiscal years 2009 and 2012 in the forest portfolio, have been very limited during the most recent years. This is directly related to the generalized perception of high risk, particularly related to governance and land rights. This Appendix presents an analysis of the risks and complexities of forest operations and attempts to untangle perception and reality.

In terms of financing sources, the global programs on climate change (supported through trust funds), largely geared toward performance-based operations, now dominate the forest portfolio (and pipeline). While this represents a major opportunity to align the forest and climate agendas in support of developing countries' efforts toward low-carbon development, there is a need to complement these resources with International Development Association (IDA)/ International Bank for Reconstruction and Development (IBRD) support to offer a comprehensive package that responds to developing countries' needs. In addition, better coordination with International Finance Corporation (IFC) investments (as well as Multilateral Investment Guarantee Agency [MIGA] guarantees) could unlock the potential for more job and wealth creation in forest value chains.

Building on the portfolio review as well as the outcomes of the 2013 Independent Evaluation Group (IEG) evaluation of the implementation of the Forest Strategy, this Appendix provides an overview of the WBG forest operations (pipeline and portfolio) and how these align with the challenges and opportunities for forests set out in Chapter 1. This gap analysis lays the foundation for the strategic directions of the current and future WBG pipeline further detailed in Chapters 2 and 3.

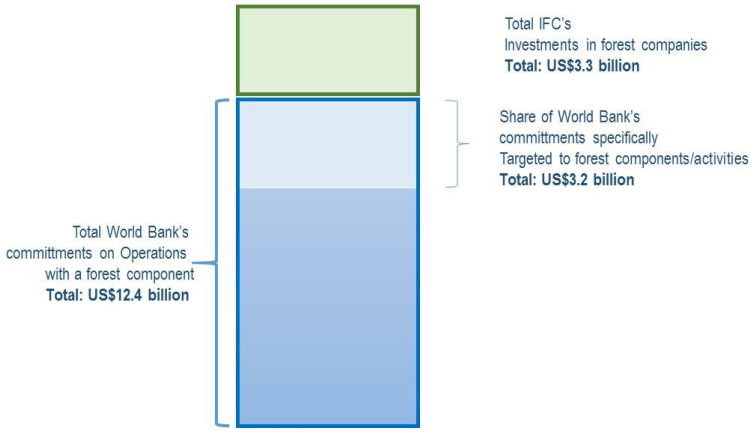
Over the last decade, the development finance landscape has evolved considerably. Official capital flows to governments, while still an important share of net flows, particularly to low-income countries, are no longer the main source of development finance, as private flows have flourished. This trend also applies to the forest sector, where private financial flows have been estimated to be as high as $15 billion per year (Asen, Savenije, and Schmidt 2012), while official development assistance was estimated at $895 million in 2013.[74]

[74] OECD website, consulted on June 2015.

Based on the latest Organization for Economic Co-operation and Development statistics, the World Bank ranks second in the list of official financiers of forest activities and first in the list of multilateral financiers.[75] This share, however, remains small compared with private financial flows.

Between fiscal years 2002 and 2015 the World Bank operations (IDA, IBRD, and trust funds [TFs]) that invested in forestry or included a component (or an activity) on forestry[76] represented a total amount of $12.4 billion, of which about a fourth was specifically dedicated to forestry components and activities. For the same period, IFC investments in forest products companies totaled approximately $3.3 billion (see Figure A.1). MIGA's involvement in the sector has been modest, supporting only a small number of forest-related projects.

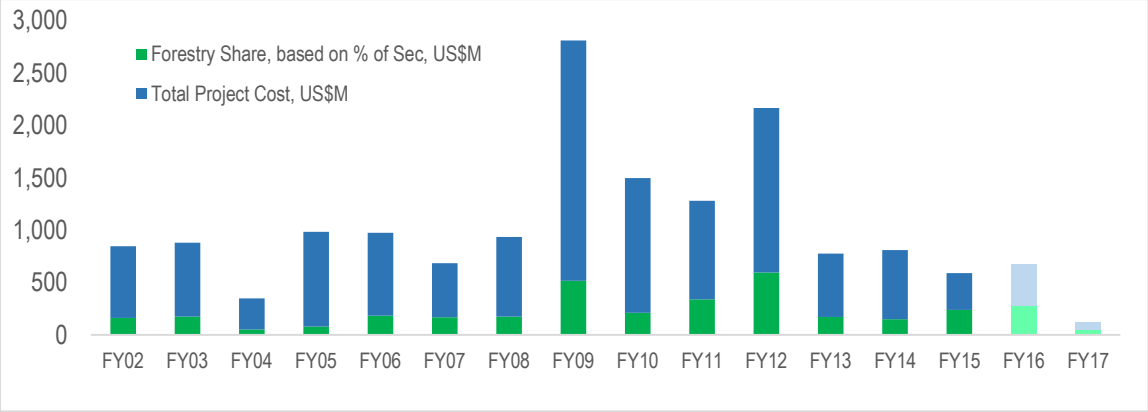
Figure A.1: TOTAL World Bank Group Commitment to the forestry sector during the FY02-15 period



I. Review of the World Bank portfolio (FY02–15)

Over the FY02–15 period, the World Bank[77] supported 309 operations with a forest component/activity (forest-coded operations).[78] The portion of the finance directly targeting forest-related activities amounted to $3.2 billion. This share was highly variable from year to year, ranging from a low of $53 million in FY04 to almost $600 million in FY12. In FY15, $239 million was committed to forest-related activities (see Figure A.2).

Figure A.2. Total Annual Finance Volume Committed to Forest-Tagged Operations (FY02–15)



[75] It is, however, difficult to establish the exact share of the WBG's engagement due to the diverse nature of WBG instruments: financing from IDA compares with other official development assistance from bilateral and multilateral sources, while IBRD and IFC financing should be compared with other non-concessional public or commercial funding.
[76] This refers to all operations that have been registered in the World Bank system with the forest code. Only a portion of the financing of the operation can be dedicated to the forest-specific activities.
[77] The World Bank means the IBRD part of the WBG, which implements IDA, IBRD, and TF operations.
[78] When initiating a new operation, the task team indicates the various themes and sectors covered by the operation and reports the respective contribution (in percentage) to the different themes and sectors selected. Forestry is one of the sectors.

1.1. Portfolio Performance

Overall Results and Impacts

Since the adoption of the WBG Forest Strategy in 2002, 88 of the 309 projects with a forest component went through a full project cycle during FY02–15 (approved, fully implemented, and brought to closure). These projects accounted for around $1.2 billion in loans, credits, and grants specifically allocated to forests.[79]

The review of the evaluative material from these operations highlights some benefits from Bank investments in forests:

- *Improving livelihoods through support for participatory forest management initiatives*. Some 73.6 million hectares of forested land is now under participatory or community forest management, including extensive programs involving indigenous peoples.
- *Bringing about positive environmental outcomes through sustainable land and water management, reforestation, and protected area management*. Extensive areas of forested land were restored or reforested. Around 25 percent of the projects in the portfolio contributed to supporting the establishment, expansion, and development of forest protected areas, contributing significantly to climate change mitigation, adaptation, and biodiversity conservation.
- *Strengthening sustainable forest management and advancing the rule of law by increasing transparency and accountability and by putting environmental standards in place*. At least 8.9 million hectares of forests are now managed based on forest management plans, and at least 3.5 million hectares now meet independently certified sustainable forest management standards. More than 400 government institutions have benefited from Bank-supported capacity-building activities.
- *Improving forest governance by contributing significantly to initiatives* such as the European Union's Forest Law Enforcement, Governance and Trade program, fostering sustainability in private sector companies (through IFC and MIGA), helping the private sector to produce higher value-added products, increasing their productivity and production capacity, expanding out-grower markets, and providing jobs for poor rural communities.

These impacts are, however, considered to be underestimated as the evaluative material on closed operations did not consistently report results, thus limiting the aggregation of results at the portfolio level. This is a challenge the Forest Action Plan will address by further enhancing the guidance for monitoring and evaluation (M&E) in forestry and forest-related sector operations.

Performance Indicators

Of the forestry-coded operations for which evaluative material is available and that have been assessed by IEG, 64 percent have achieved outcomes that are "Satisfactory" or better. Table A.1 suggests that the forest portfolio has performed reasonably well against Bank-wide portfolio performance indicators and is at par with the Agriculture and Environment/Natural Resources portfolios in terms of the quality of achieved outcomes. The quality of the M&E system, however, is rated low and needs to be substantially improved.

[79] The other 221 operations with a forest component, accounting for about $2 million dedicated to forest activities, are currently under implementation.

Table A.1: IEG Ratings of Performance of the Bank Forest Portfolio (FY02–15)

Performance Indicator	Forests	Agriculture GP	ENR GP
Outcome			
(% Moderately Satisfactory or Better)	**64**	**62**	**62**
Bank Overall Performance			
(% Moderately Satisfactory or Better)	**60**	**65**	**55**
Borrower Overall Performance			
(% Moderately Satisfactory or Better)	**70**	**62**	**69**
ICR quality			
(% Moderately Satisfactory or Better)	**90**	**87**	**90**
M&E Quality			
(% Moderately Satisfactory or Better)	**24**	**27**	**26**

Source: WB Business Intelligence, Data System (July 2015).

The Bank has responded to the call for incorporating gender considerations in project design: the extent to which the forest portfolio is gender-informed increased from 63 percent of all projects in FY10 to 100 percent in FY13.

Complexity and Perception of Risks

The often perceived risk, both within and outside the Bank, may be anchored in anecdotal references to Inspection Panel cases related to the forest portfolio. However, records from the Inspection Panel of the World Bank Group suggest a much more nuanced and proportionate picture (see table A.2): a total of 13 requests related to forests have been received by the Inspection Panel: only 5 focused on forestry projects and 8 claimed adverse impacts of Bank-funded projects on forests (mainly on operations related to extractive industries, water, and hydropower). These 13 requests represent 12.6 percent of the 103 total requests received by the panel in its 22 years of existence. Nonetheless, while some Inspection Panel cases on forest operations gained attention, the number of Bank-funded projects on forests brought to the Inspection Panel do not provide definitive evidence of risk of the overall portfolio and sector.

Table A.2: Number of Inspection Panel Cases Related to Forests

Projects / Claim Received by the Inspection Panel of the World Bank Group	Type of Case: 1. Forest project or 2. Projects with claims of adverse impacts on forests	Investigated Yes / No	Claim from Indigenous Peoples Yes / No
Kenya: Natural Resource Management Project. 2013.	1	Yes	Yes
Liberia: Development Forestry Sector Management Project. 2010.	1	No	No
Congo, Dem. Rep.: Transitional Support for Economic Recovery Credit. 2005.	1	Yes	Yes
Cambodia: Forest Concessions Management and Control Pilot Project. 2005.	1	Yes	Yes
Brazil: Rondonia Natural Resource Management Project. 1995.	1	No	No
Haiti: Mining Dialogue. 2015.	2	No	No
India: Vishnugad Pipalkoti Hydro Electric Project (VPHEP). 2012.	2	Yes	No
India: Improving Rural Livelihoods through Carbon Sequestration Project (BioCarbon Fund). 2012.	2	No	No
Tajikistan: Energy Loss Reduction Project (Request from Uzbekistan). 2010.	2	No	No

Kazakhstan: South-West Roads, Western Europe-Western China International Transit Corridor (CAREC-1b & 6b) (Second Request). 2010.	2	No	No
Papua New Guinea: Smallholders Agriculture Development Project. 2009.	2	Yes	Yes
Uganda: Private Power Generation Project (Bujagali). 2007.	2	Yes	Yes
Brazil: Parana Biodiversity Project. 2006.	2	No	No

Source: WBG Inspection Panel, September 2015.
Note: In the 2007 Uganda Private Power Generation Project, the panel did not agree with the requesters that they were indigenous peoples as per the Bank's Policy on Indigenous Peoples OP 4.10.

1.2. Major Features of the World Bank Forest Portfolio

Three main features characterize the current Bank forest portfolio and pipeline.

A multisectoral portfolio by nature: While most of the forest-coded operations are implemented through the Global Practice for Environment and Natural Resources, many other global practices—such as Agriculture; Water; Energy, and Extractives; and Social, Urban, Rural, and Resilience—have traditionally included forestry-specific components or activities in their portfolios (see Figure A.3). Therefore, the forest engagement in most developing countries requires an integrated, multisectoral approach to address the dynamics affecting forests, such as agricultural expansion, mining development, or infrastructure construction.

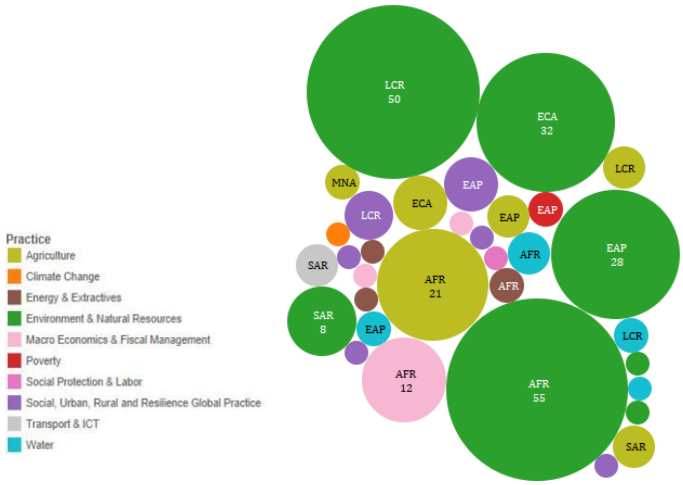


Figure A.3: Number of Forestry-Coded Operations Managed

Importance of trust funds: While IBRD/IDA has traditionally been by far the largest source of financing in terms of volume (see Figure A-4), the trust-funded operations constitute the vast majority of the portfolio in terms of number. Over the FY02–15 period, the 42 IBRD operations accounted for a cumulative $7.8 billion, the 64 IDA operations for $3.5 billion, and the 203 TF operations for $1.1 billion[80] The large number of small TF-operations (40 percent of which were below $1 million) has contributed to a perception of fragmentation of the forest portfolio, with a higher transaction cost per dollar committed. However, a new trend has emerged since FY13: the portfolio share of trust-funded operations has substantially increased in terms of financial

[80] The cumulative amounts refer to the full amount of the forestry-coded operations (not the forestry share).)

volume (surpassing 50 percent in FY15) and with much bigger operations. The main sources for these operations are the forest-related climate trust funds administered by the World Bank.

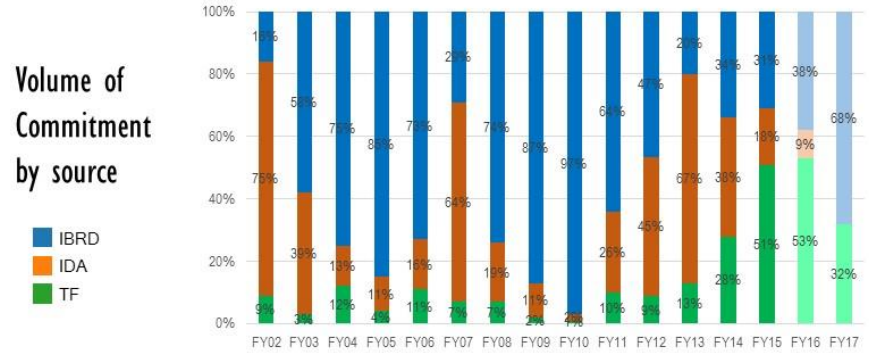


Figure A.4: Volume of Commitments by Sources of Financing for Forest-Related Operations in FY02–15

The World Bank is hosting a variety of multidonor trust funds to address issues of global concern. Three major trust funds tackling forests and climate change provide substantial additional resources to address the forest challenge globally: the Forest Carbon Partnership Facility (FCPF), the BioCarbon Fund Initiative for Sustainable Forest Landscapes (BioCF ISFL), and the Forest Investment Program (FIP). Contributor countries have requested the World Bank to manage and implement their funds to address the forest challenge, taking advantage of the Bank's fund management and technical expertise, country experience, global knowledge, and deep multisectoral engagement. Commitments to these instruments have surpassed $2 billion (see Table A.3).

Even at pilot scale, the interventions financed by the forest and climate funds have been very successful at generating a wealth of knowledge and have opened opportunities for larger-scale operations on sustainable land and forest landscapes that support long-term development trajectories.

Table A.3: Forest/Climate Change-oriented Global Programs

Global Program	Donor Commitment	Objectives
Forest Carbon Partnership Facility (FCPF)	Readiness Fund: $372.56 million	Assisting governments to create an enabling environment for forest-relevant investments that result in verifiable GHG emission reductions with a view to receiving results-based payments from the Carbon Fund or, eventually, the carbon market
	Carbon Fund: $692.4 million	Piloting results-based payments for REDD+
Forest Investment Program (FIP) of the Climate Investment Funds (CIF)	$785 million	Providing scaled-up upfront financing for readiness reforms and investments, identified through national REDD+ readiness or equivalent strategies
BioCarbon Fund Initiative for Sustainable Forest Landscapes (ISFL)	$360 million	Piloting performance-based payments for landscapes with upfront funding for enabling environments and some investments

A transition to climate finance transactions: The use of sectoral investments (and Development Policy Loans) has traditionally driven WB interventions in the forestry and related sectors. More than 38 percent of the total commitment to the Global Programs on Forests and Climate is earmarked for performance-based payments incentivizing developing countries to manage forested landscapes at scale. These mechanisms offer promising new avenues for leveraging additional resources for forests. The FCPF Carbon Fund and the BioCF-ISFL are now supporting the preparation of performance-based programs in 21 countries in Latin America, Africa, and Southeast Asia through performance-based payments (see Table A.4). Given their very nature (payments for results), discussions are ongoing between GP-ENR, CCSA-CC, LEGEN, and OPCS to identify how lessons learned from PforR can inform the way the performance-based programs under the climate funds are processed.

Table A.4. An Emerging Business: Results-based Payments

Letters of Intent and Max Value of Results-based Payments		
FCPF		
Country	**LOI Signature Date**	**Max value at $5/tCO2e[81] (million dollars)[82]**
1. Chile	8/22/14	$26
2. Costa Rica	9/10/13	$60
3. Cote D'Ivoire	11/18/15	$82.5
4. Congo, Dem. Rep.	6/5/14	$50
5. Ghana	9/29/14	$92.5
6. Mexico	9/24/14	$43.5
7. Mozambique	11/30/15	$43.6
8. Nicaragua	1/21/16	$55
9. Congo, Rep.	9/25/14	$58.5
10. Vietnam	12/10/14	$51.5
11. Nepal	6/3/2015	$70
12. Dominican Republic	*	$37.5**
13. Fiji	*	$18**
14. Guatemala	*	$84
15. Indonesia	*	$240.5
16. Lao PDR	*	***
17. Madagascar	*	$82**
18. Peru	*	$53
Total FCPF Carbon Fund	**-**	**$1,148**
BioCF ISFL		
19. Colombia	*	$50
20. Ethiopia	11/3/15	$50
21. Zambia	*	$30
Total BioCF ISFL	**-**	**$130**
* LOI not yet signed (projected date for signature) ** FCPF Carbon Fund Resolution on October 16, 2015 *** Amount to be confirmed		

[81] The latest price indication per ton of CO_2 equivalent provided by FCPF Carbon Fund Participants.

[82] Final commitment of funds available in FCPF Carbon Fund to individual programs will be made prior to subsequent signature of Emission Reduction Payment Agreements.

II. Review of the IFC portfolio

2.1. Investments All Along the Value Chain

The IFC has a vast experience in the forestry sector, and its portfolio spans a diverse group of subsectors throughout the wood fiber value chain (see Figure A.5). The IFC supports forestry investments (either in plantations or natural forests); pulp, paper, and converted products (ranging from linter and straw pulp to tissue, sacks, and various kinds of packaging); and wood-based products (for example, wood panels, particleboard, and plywood). As such, IFC supports the forest products sector, which supplies a wide range of essential products—from construction materials, paper, food packaging material, sanitary products, and specialty chemicals to watershed and soil conservation—from a renewable resource.

Figure A.5: Wood Fiber Value Chain

Forest investments can bring together communities and companies through partnership arrangements, build small and medium-size enterprises, or enable socially responsible corporate investments. These investments have the potential to deliver benefits to farmers, small forest owners, local communities, and indigenous peoples. In the upstream segment of the fiber chain, the IFC views its investments in sustainably managed commercial plantation operations as an important means of reducing pressures on natural forests. It promotes global best-practice forest management standards and has contributed significantly to increasing the amount of total forestland under certified management. In the downstream segment, the IFC invests in wood-based industries that use “chain of custody” practices and that aim at using best available technologies and the efficient use of resources, including recycled wood products.

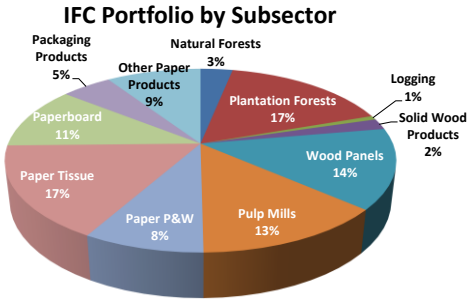
The companies supported by the IFC through advisory services and investments often generate significant employment, ranging from a few hundred to tens of thousands of new jobs. Indirect employment impacts can be many times higher. Of approximately 31 IFC forest sector projects that regularly report on jobs, approximately 85,000 direct jobs have been created. IFC’s forestry portfolio has sequestered 4 million tons of CO_2e per year.

2.2. IFC’s Investments over the Last 10 Years

The IFC finances investments with its own resources and by mobilizing capital in international financial markets. In addition to equity and loan financing, the IFC also provides technical assistance to its clients.

In 2005–14, the IFC invested more than $2.4 billion in 54 forestry sector projects, with a total cost of about $10 billion.[83] The size of the projects ranged between $3 million (a packaging project in the Kyrgyz Republic) and $3.6 billion (a pulp mill project in Brazil).

The pulp and paper industry accounted for 58 percent of the IFC investments, while 21 percent was directed at wood-based panel and engineered-wood products (see Figure A.6). The share of forestry projects was 21 percent and on the rise (11 percent in 2006). During this period, about 65 percent of IFC projects supported an integrated approach along the value chain (production and processing). IFC technical assistance was mostly targeted at specific projects, but some sector work was also carried out.

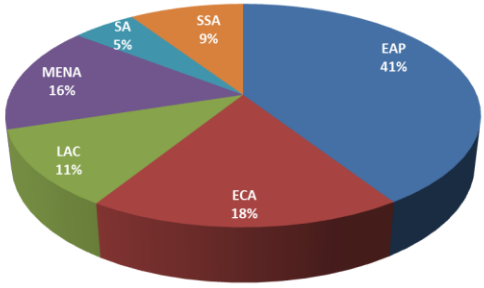


Between 2005 and 2014, IFC invested in 29 countries. East Asia and the Pacific attracted the most financing, with financing very limited in the Middle East and Africa. The relatively high proportion of IFC investments channeled to the East Asia and Pacific Region reflects the importance of the forest industries there and the emerging investment opportunities. Both in East Asia and the Pacific and in Latin America and the Caribbean, IFC's main investments have targeted the rapidly expanding pulp and paper industries in China, India, and Brazil.

The current IFC portfolio in the forestry products sector stands at $675 million, with 52 active investments involving 41 clients. Overall, it shows good regional and subsector diversification, with a natural higher weight of East Asia (in line with the sector activity in the last 10 years) (see Figure A.7). Twenty-four percent of the portfolio is invested in IDA countries.

The pulp and paper subsector represents 63 percent of the total sector portfolio; the remaining 37 percent corresponds to forestry and wood products subsectors.

In terms of financial products, one-third of the portfolio is equity participation in forestry-related companies, and the other two-thirds are loans.

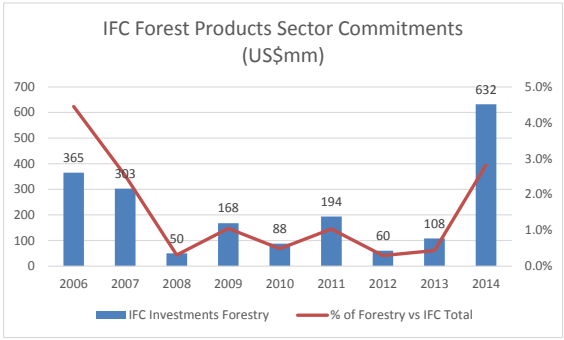


2.3. Opportunities for IFC in the Forest Products Sector

It is estimated that the forest products sector has been growing at about 3 percent per year in the last decade. With the demand for fiber growing and no sign of tempering, it is expected that most of the additional supply will come from developing countries, which represents a shift in an industry where historically private investment in timber production and processing has been concentrated in industrial counties. Investments required for planting, harvesting, and processing can be large (that is, establishing a modern pulp mill can cost more than $1 billion), thus most of these investments come from global corporations or joint ventures involving local partners and development banks.

[83] Over the period FY02–15, the IFC has invested $3.3 billion.

The IFC has the potential to play a significant role in the industry as opportunities emerge in the developing world by ensuring that these large investments are made in a socially and environmentally responsible manner. The IFC could motivate additional investments to maximize the full potential of the forestry sector in the developing world. As of today, however, the IFC has not responded to the booming opportunities (see Figure A.8). Investments in the sector remain limited in terms of volume and scope. This is a result of a shift in strategic focus within the IFC, the entrance of other financial development and commercial institutions (such as the Brazilian Development Bank or the Inter-American Development Bank) into this sector, and difficulties identifying industry players that can comply with IFC's Standards, including Environmental and Social Performance.



III. Review of the MIGA Portfolio

As a provider of political risk insurance, MIGA's involvement in the forest sector is demand-driven. Typically, a project sponsor's first priority is to secure funding and to ensure its operational feasibility. While in some cases the financiers of the project will make their contribution contingent on MIGA coverage, this is usually only the case for large-scale projects. Investments in the forest products sector tend to be of a smaller scale, where political risk insurance is seen as an important but not necessarily critical risk management tool, and clients typically engage with MIGA at an advanced stage of project development. MIGA's engagement in the forest products sector is therefore generally opportunistic and its ability to influence project design is limited; however, all projects—no matter how small—must comply with MIGA's Policy and Performance Standards on Environmental and Social Sustainability. .

Over the FY02–15 period, MIGA's involvement in the forest products sector was limited. MIGA currently has three investment guarantees related to the forests sector in its active portfolio, one of which is around $50 million and the other two below $10 million.

IV. Lessons Learned: Informing the *Forest Action Plan FY16–20*

The lessons learned from the FY02–15 portfolio, as well as the IEG recommendations from the evaluation of the implementation of the 2002 Forestry Strategy, are critical for defining the priorities for the *Forest Action Plan FY16–20*. They highlight shortcomings or lost opportunities in our delivery model and encompass areas that need improvements or a new focus, along with those where scaled-up actions are appropriate. Table A.5 identifies the key areas that will be addressed in the Forest Action Plan.

Table A.5: Identified Key Areas to be addressed by the Forest Action Plan

<table>
<tr><th colspan="2">Improvements in Our Delivery Model</th></tr>
<tr><td colspan="2">

Enhance the role of forests in the WBG portfolio.
Increase the commitments from IDA/IBRD resources to the forest sector and strategically combine with trust fund resources to offer developing countries a mix of instruments that can best respond to country-specific challenges, opportunities, and circumstances.
Advance a landscape-based forest-smart programmatic approach that more effectively addresses a range of development challenges and opportunities related to forests and that supports solutions at scale.
Make World Bank investments forest-smart: upstream collaboration with other Global Practices on investments to reduce potential adverse impacts on forests and optimize positive synergies
Build stronger synergies between the different WBG entities (IBRD, IFC, and MIGA) to foster more socially and environmentally responsible private sector investments.
Systematically track results and generate socioeconomic data on forests to enhance the evidence base.
Systematically use core sector indicators to allow for aggregation at portfolio level.
Foster multidisciplinary WB task teams.

</td></tr>
<tr><th colspan="2">Areas That Need Scaling Up</th></tr>
<tr><td>
Forestry Investments

Community-based forest management
Protection of forest biodiversity, within and outside Protected Areas
Restoration of degraded forestlands
Reforestation, including mangroves
Tree planting and commercial plantations (small-, medium- and large-scale), including on degraded lands
Nature-based tourism
Work with small and medium-size forest enterprises

</td><td>
Forest-smart investments

Use of ex-ante spatial planning to guide decisions on sustainable development investments
Sustainable forest-based commodities, including shade-grown coffee, cocoa
Promotion of integrated watershed/basin management
Promotion of integrated landscape approach
Enhancement of landscape resilience
Mainstreaming of forest dimension in investments in agriculture, extractives, energy, transport, and hydroelectric power

</td></tr>
<tr><td colspan="2">Cross-Cutting: Improve governance, policy frameworks, and institutions to reduce risk to the forest sector.</td></tr>
</table>

APPENDIX B. Monitoring the Forest Action Plan

Monitoring of the Forest Action Plan will align with the WBG's overall Scorecard and will accordingly report on three Tiers:[84] long-term development outcomes that countries are achieving, results reported by WBG clients implementing WBG-financed operations, and operational and organizational effectiveness. The systematic use of Sector Core Indicators will allow for aggregation of the results and impacts at the program level. Progress on implementation of the Forest Action Plan will be reviewed at midterm during FY18, when end targets may be refined.

<table>
<tr><td rowspan="5"></td><td>WBG Development Outcomes (10–15 years)</td><td colspan="3">End extreme poverty and boost shared prosperity in a sustainable manner</td><td rowspan="2">Tier I
Long-term development outcomes</td></tr>
<tr><td><u>Forest Action Plan</u></td><td colspan="3">Tap the potential of forests and trees to contribute to WBG goals of ending extreme poverty and boosting shared prosperity in a sustainable manner</td></tr>
<tr><td rowspan="2">Programs / Projects</td><td>Focus Area 1: Sustainable Forestry</td><td>Focus Area 2: Forest-Smart Interventions in Other Sectors</td><td>Crosscutting Themes: Climate Change & Resilience
Rights & Participation
Governance & Institutions</td><td rowspan="2">Tier II
Results reported by WBG clients implementing WBG-financed operations</td></tr>
<tr><td colspan="3">Aggregation from project/program level, using core indicators</td></tr>
<tr><td>WBG Delivery Model</td><td colspan="3">Programmatic approach that combines various instruments (technical assistance, investment, performance-based payments) supported by a mix of financing sources (IBRD/IDA, TFs, IFC) wherever possible. For other countries, project approach will be maintained.</td><td>Tier III
Operational and organizational effectiveness</td></tr>
</table>

Tier I – Long-term development outcomes that countries are achieving

The implementation of actions proposed in the *Forest Action Plan for FY16-20* will contribute to ending extreme poverty and to boosting shared prosperity in a sustainable manner.

Relevant Tier 1 World Bank Score Card Indicators:

- Population living on less than $1.25 (PPP) a day (%)
- Median of growth rates of average real per capita income of the bottom 40 percent (%)
- Average annual deforestation change (%)
- Emission reductions with support of special climate instruments (million tons CO_2e)

[84] The World Bank Group Corporate Scorecard provides a high-level and strategic overview of the WBG's World Bank Group's performance toward achieving the corporate goals. It is the apex from which indicators cascade into the monitoring frameworks of the three World Bank Group institutions (see http://corporatescorecard.worldbank.org).

Tier II – Results reported by WBG clients implementing WBG-financed operations

As indicated in Chapter 3, a specific effort will be made to improve the quality of the monitoring of the forest portfolio. To do so, from FY16 on task teams will be required to use core sector indicators in the results framework whenever possible, to allow for aggregation at the portfolio level. Whenever possible (for instance, during a restructuring), all efforts will be made by the teams, and with the support of the Practice Managers, to include Core Sector Indicators.

This note provides guidance for the use of the relevant core sector indicators that should be included in each project/program, which corresponds to the relevant investment areas of the Forest Action Plan:

Investment Area 1: Promote sustainable forestry investments
Investment Area 2: Promote forest-smart investments (in agriculture, energy, mining, water, transport sectors)
Cross-cutting themes: Cross-cutting themes – Enabling environment
- Climate Change & Resilience
- Rights & Participation
- Institutions & Governance

Core Sector Indicators	Unit
All programs/Projects will monitor the following indicators	
Beneficiaries [A]	Number
Of which, women	Number
Of which, vulnerable and marginalized people	Number
Forest area brought under management plans	Ha
Area restored or re/afforested	Ha
People in targeted areas with increased monetary benefits from forests and trees	Number
GHG emissions reduced or avoided (or Carbon sequestered) as part of the project activities	tCO_2e
Investment Area 1: Promote Sustainable Forestry Investments	
Forest area brought under management plans	
Area restored or re/afforested	
People employed in production and processing of forest products	Number
Area brought under enhanced biodiversity protection	*Ha*
New areas outside protected areas managed as biodiversity-friendly	*Ha*
Volume of Bank funding: lines of credit – microfinance	*$*
Volume of Bank funding: lines of credit – SME	*$*
Investment Area 2: Promote Forest smart Investments	
Avoided Deforestation	Ha
Area restored or re/afforested	
Land area where sustainable land management practices have been adopted as a result of the project	Ha
Land users adopting sustainable land management practices as a results of the project	Number
Land area brought under a catchment system as a result of the project	Ha
Investment Area 3: Cross cutting themes – Enabling environment	
Climate Change	
Land area where sustainable land management practices have been adopted as a result of the project	Ha
GHG emissions reduced or avoided (or Carbon sequestered) as part of the project activities	tCO2
Rights and Participation	
Representatives in community based decision making and management structures that are from the vulnerable or marginalized beneficiary population	
Participants in consultation activities during project implementation	

Target population with use or ownership rights recorded as a result of the project	Number
Target land area with use or ownership rights recorded as a result of the project	Ha
Institutions & Governance	
Government institutions provided with capacity building support to improve management of forest resources	Number
Reforms in forest policy, legislation or other regulations supported	Yes/No
Forest users trained	Number

Source: World Bank. (2012). List of Core Sector Indicators. Results Platform. OPCS.

Tier III – Operational and Organizational Effectiveness

Development Outcome Ratings of forest sector projects	
Satisfactory operation outcomes at completion	% IEG rating
IBRD countries	% IEG rating
IDA countries	% IEG rating
Operational Effectiveness of forest sector projects	
Number of Programmatic Approaches on forest landscapes	Number
Number of Forest Country Forest Notes	Number
Active IDA/IBRD/TF operations	Number
Lending commitments to forests: IDA/IBRD	$ million
IFC investments	$ million
Recipient executed trust fund commitments to forests	$ million
Problem projects (% of forest portfolio)	%
Gender-informed project (% of forest portfolio)	%
Analytical and advisory activities related to forests and related sectors	number
Number of staff with forest-related skills	Number