WORLD BANK GROUP

Forest Action Plan FY16–20

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Foreword

The World Bank Group (WBG) 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; storing carbon; 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, forest loss will translate into economic and social losses and severe environmental degradation: When forests are cleared, carbon emissions accelerate, plants and animals vanish, and soil erosion threatens agriculture and infrastructure. 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 WBG, 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.

The Forest Action Plan FY16–20 aims to integrate the sustainable management of forests more fully into the development mosaic and define priorities for the 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 the 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.

The Forest 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, carbon footprint, resilience, productivity, and supply chains—and are showing greater willingness to change business as usual. Building on inputs received from various stakeholders, the Forest Action Plan defines the WBG's 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, which were 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.

The Forest Action Plan FY16–20 will guide our engagement as we partner with the public and private sectors to make these aspirations a reality.

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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's goals of ending extreme poverty and increasing shared prosperity in a sustainable manner by 2030. The FAP seeks to support countries that are willing to embed forests in their development priorities, by focusing more deliberately on the positive contributions that forests make to the poverty reduction, food security, economic development, and climate action agenda. The FAP 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, 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. The FAP 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 together new knowledge, technology, and capacity for collaboration across sectors 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, 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 (NDCs) to combat climate change and its impacts.

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 9 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 caused by weather shocks, crop failures, or changes in commodity prices. Forests also contribute to food security and health, by supplementing

diets as well as providing fuelwood for cooking and sterilizing food for about 2.4 billion people.

The formal timber sector contributes $600 billion to the global economy (about 1 percent of gross domestic product). 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 (agriculture, energy, water, mining, and 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 forests is noncash—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 cause a sharp increase the demand for food, fiber, energy, and minerals, driving large-scale land use changes at the cost of forest and tree cover.

Threats to forests are manifold and often interdependent. Hence, addressing the threats requires recognition of the real economic contribution of forests, as well as a coordinated multisector 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 that activities in other sectors, such as agriculture, transport, mining, or hydropower, are undertaken in ways that limit the impacts on forest integrity while at the same time maximizing development benefits. To address the global forest challenge, forests would need to become an integral part of national development agendas. For that to happen, forests would need to be recognized for the many opportunities they offer, instead of only the challenges and risks 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 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 the mitigation and adaptation agendas.

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

Building on the 2002 Forest Strategy, the FAP identifies two focus areas for 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 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's 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 high-income 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 Forest Action Plan aims to ensure that investments in the forestry sector protect and optimize the use of forests (natural and planted) to sustain livelihoods and create jobs and economic opportunities in rural areas. Together, the entities of the World Bank Group (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 can partner with responsible private sector investors to expand investment in plantations, enterprises, and value chains. And the Multilateral Investment Guarantee Agency can mitigate the 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

Tap the potential of forests and trees to contribute to the WBG's goals of ending extreme poverty and boosting shared prosperity in a sustainable manner	
Rationale for WBG engagement	**WBG approach**
Focus Area 2: Forest-Smart Interventions in Other Economic Sectors	
Increasing demand for food, fiber, fuel, and minerals often drives 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. Through the provision of ecosystem services, forests and trees can sustain 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 the 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's organizational structure, based on sector Global Practices and Cross-Cutting Solutions Areas, can enable effective delivery of multisector solutions tailored to country-specific needs.
Potential Interventions under Focus Area 2	
Support informed decision making on land use 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) • 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 mitigation and adaptation: 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—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. In addition, more focus will be given to the contribution of forests to the adaptation agenda and resilient ecosystems: through the landscape approach, the WBG will contribute to the enhanced resilience of rural economies and societies, in particular to climate shocks.
Rights and Participation Clarification of rights related to access to forests 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 who are 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 the 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 who are willing to strengthen their institutional capacity and adjust their policy/regulatory framework to manage sustainably 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, within the WBG and with client countries, upstream dialogues on forests. 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 the World Bank's 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 the SCDs and CPFs. The notes will also reflect priority actions presented by countries in their NDCs 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 that are 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: country-owned program, appropriate mix of financial instruments, cohesive financial architecture, and 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 can access various sources of funding for the sustainable management of its forest landscapes. The 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 forest portfolio will help build a strong evidence

base on results from investments. The FAP supports actions at two levels: (i) improving the capacity of the WBG to monitor progress toward achieving results, reporting on these, and evaluating impacts of forest-relevant interventions; and (ii) supporting 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 World 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, toward a more programmatic approach that would strategically position the WBG to support countries delivering on forest-smart interventions. Building on the lessons learned from the Finance and Markets Global Practice, which 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. The approach 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 Forest Carbon Partnership Facility and Forest Investment Program (and its associated Dedicated Grant Mechanism for Indigenous Peoples and Local Communities) have deepened the World 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.

Note

1. IEG (2013).

Abbreviations

BioCF	BioCarbon Fund
CAT	Carbon Assessment Tool
CC-CCSA	Climate Change CCSA
CCSA	Cross-Cutting Solutions Areas
CMU	Country Management Unit
CO_2e	carbon dioxide equivalent
CODE	Committee on Development Effectiveness
COP21	United Nations Climate Change Conference
CPF	Country Partnership Framework
CSIs	core sector indicators
DGM	Dedicated Grant Mechanism
DIME	Development Impact Evaluation
EAP	East Asia and Pacific
ECA	Europe and Central Asia
ENR	Environment and Natural Resources
ER	emission reduction
FAO	Food and Agriculture Organization of the United Nations
FAP	Forest Action Plan
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
FY	fiscal year
GDP	gross domestic product
GEF	Global Environment Facility
GHG	greenhouse gas
GNI	gross national income
GP	Global Practice
IBRD	International Bank for Reconstruction and Development
ICR	Implementation and Completion Review
ICT	information and communications technology
IDA	International Development Association
IEA	International Energy Agency
IEG	Independent Evaluation Group
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFI	international financial institution
ISFL	Initiative for Sustainable Forest Landscapes
IUFRO	International Union of Forest Research Organizations
LAC	Latin America and the Caribbean
LOI	letter of intent
LSMS	Living Standards Measurement Study
M&E	monitoring and evaluation
MENA	Middle East and North Africa
MIGA	Multilateral Investment Guarantee Agency

NDC	Nationally Determined Contribution
NWFP	non-wood forest product
OECD	Organisation for Economic Co-operation and Development
OPCS	Operations Policy and Country Services
PEN	Poverty and Environment Network
PES	payments for ecosystem services
PPCR	Pilot Program for Climate Resilience
PPI	predictive proxy indicator
PROFOR	Program on Forests
PROGEDE	Sustainable and Participatory Energy Management Project
REDD+	Reducing Emissions from Deforestation and Forest Degradation, Conservation of Forest Stocks, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks
RRI	Rights and Resources Initiative
SA	South Asia
SAWAP	Sahel and West Africa Program
SCD	Systematic Country Diagnostic
SDG	Sustainable Development Goal
SESA	Strategic Environmental and Social Assessment
SME	small and medium enterprise
SMFE	small and medium-size forest enterprise
SSA	Sub-Saharan Africa
SURR	Social, Urban, Rural, and Resilience
TF	trust fund
UK DECC	United Kingdom Department of Energy and Climate Change
UNFCCC	United Nations Framework Convention on Climate Change
WAVES	Wealth Accounting and the Valuation of Ecosystem Services
WBG	World Bank Group
WDI	World Development Indicators
WHO	World Health Organization

Introduction: Why a Forest Action Plan?

The World Bank Group (WBG) Forest Strategy, *Sustaining Forests: A Development Strategy*, continues to frame the institution's work in the forest sector. Adopted in 2002, *Sustaining Forests* was prepared at a time when the World 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.[1]

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

For example, although it was not explicitly addressed in the 2002 strategy in depth, the World Bank's support for work on forest carbon has been consistent with the institution's focus on developing partnerships and protecting the global services and value of forests.

A review of the implementation of the *Sustaining Forests* strategy was conducted by the Independent Evaluation Group (IEG) in 2012–13.[2] Although it confirmed that the 2002 WBG Forest Strategy was still relevant and aligned with the World Bank's mission and comparative advantage, the IEG identified a few areas of weaknesses in implementation, in particular in the impact of WBG interventions on poverty alleviation, and reporting on results from investments at a strategic level.

In February 2013, the WBG's Committee on Development Effectiveness (CODE) welcomed the recommendations from the IEG review. CODE 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 WBG's proposal to prepare a Forest Action Plan (FAP) building on the 2002 *Sustaining Forests* strategy and taking into account the IEG's recommendations to strengthen the impact of WBG forest interventions. Specifically, the committee urged the WBG to strengthen its 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 the aim is to ensure that investments related to forests contribute to the sustainable management of forests and value chains, and (ii) forest-smart interventions, where the aim is to have interventions in other sectors not come at the expense of forest capital. The FAP 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 in the WBG's Environment Strategy 2012–22, *Toward a Green, Clean, and Resilient World for All*, and is fully aligned with the WBG Climate Change Action Plan.

The FAP 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, 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."

In July 2014, the WBG introduced a new institutional organization, with 14 Global Practices (GPs) and five Cross-Cutting Solutions Areas (CCSA). The new organization 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 the development of this FAP). The Environment and Natural Resources GP works closely with other GPs and CCSAs and in coordination with respective country management units to promote the forest agenda. In addition, close collaboration with the International Finance Corporation (IFC) and 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 GPs and CCSAs, 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 several governments.

Notes

1. 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 World Bank lending, accompanied by progressive disengagement.
2. IEG (2013).

1. Contribution of Forests to Sustainable Development

Summary

This chapter describes the role forests play in contributing to the World Bank Group's goals of ending extreme poverty and increasing shared prosperity in a sustainable manner by 2030. The chapter 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 the 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. However, the global extent of forests has continued 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 the mitigation and adaption agendas: they can help build productive and resilient landscapes while removing atmospheric carbon and other greenhouse gases. Concerted action is needed if society is to make long-lasting use of global forest resources for poverty eradication and sustainable economic development, and protect the global forest estate for future generations.

Forests and the World Bank Group's 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 and trees—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 World Bank Group's (WBG's) goals of ending extreme poverty and promoting shared prosperity in a sustainable manner, and the broader 2030 Sustainable Development Agenda set out in the Sustainable Development Goals.

Forests Provide Pathways Out of Poverty

Some 300 million to 350 million people, about half of whom are indigenous, live within or close to dense forests and depend almost entirely on forests for subsistence (Chao 2012). Hundreds of millions more, including people

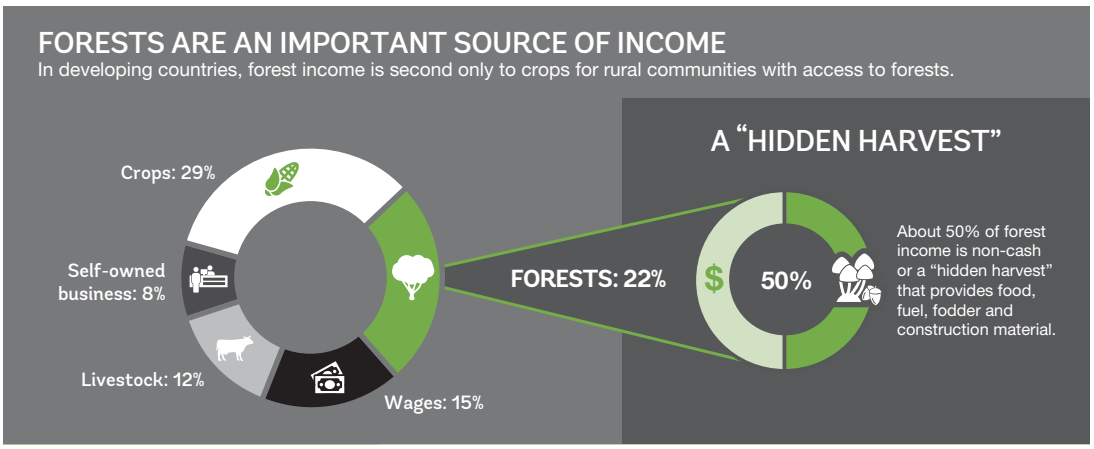
in cities, depend on forest resources for food, construction materials, and energy sources.[1]

Beyond subsistence, forests are an important aspect of rural livelihoods. In Tunisia, a study shows that the 14 percent of the country's population living in rural areas derives 30 to 40 percent of their income from forests and rangelands (Croitoru, Daly, and Bennouna 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 sources.[2] This contribution is larger than that of wage labor, livestock, self-owned businesses, or any other category aside from crops. About half of the income from forests is noncash and includes food, fodder, energy, house-building materials, and medicine (see figure 1.1). This noncash 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. Although 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).

Forest resources enable people to rise out of extreme poverty and reduce vulnerability. According to the PEN findings, an estimated 9 percent of the rural population is lifted above the extreme poverty line[3] because of income from forest resources. The impact of forests on poverty is greatest in the Africa region, with forest-related income lifting 11 percent of rural households out of extreme poverty.[4]

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 caused by 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.

FIGURE 1.1 Forests as a Source of Income



Source: Based on results from the Poverty and Environment Network, 2015.

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 the regressive effects from forest loss that risk driving people into extreme poverty are avoided.

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. Forests can store and sequester carbon as well as provide ecosystem services that enhance the resilience of ecosystems. Maintaining and restoring healthy forests are thus an essential part of meeting the WBG goals.

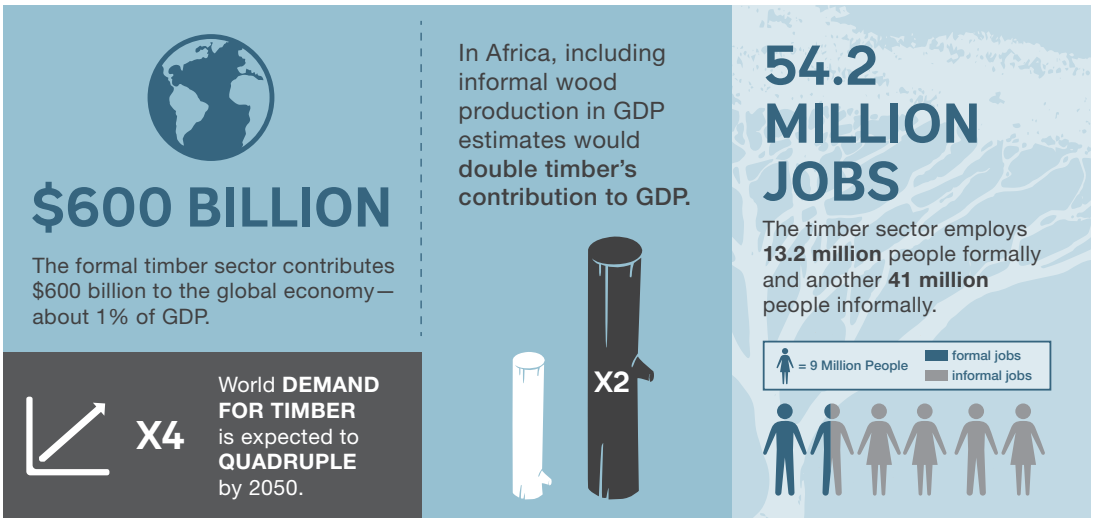
Together, deforestation and forest degradation contributed to 2.9 billion tons of carbon dioxide equivalent (CO_2e) annually during 2005–10, about 15 percent of the world's greenhouse gas (GHG) emissions and the third largest source after coal and oil. The Paris Agreement adopted at the United Nations Climate Change Conference (COP21) 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 increase forest cover (through afforestation and 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. Forests provide important safety nets as well for local communities, helping them cope with climate shocks.[5] Forests can also constitute natural infrastructure that protects against the adverse impacts of climate change, such as mangroves that help reduce risks from disasters related to climate extremes and sea level rise.[6] The capacity of a forest ecosystem to cope with changing environmental conditions and deliver services that can mitigate climate shocks at a broader scale is determined by its biological and ecological resources (Russell et al. 2012).

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 gross domestic product (GDP)—each year (FAO 2014).[7] 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 1.2.).

FIGURE 1.2 Contribution of Forests to the Economy



Sources: FAO (2014). Indufor (2012).
Note: GDP = gross domestic product.

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 fuelwood and charcoal for their own use (FAO 2014). The fuelwood 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 charcoal sector in Sub-Saharan Africa employs seven 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, 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).

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, which 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.

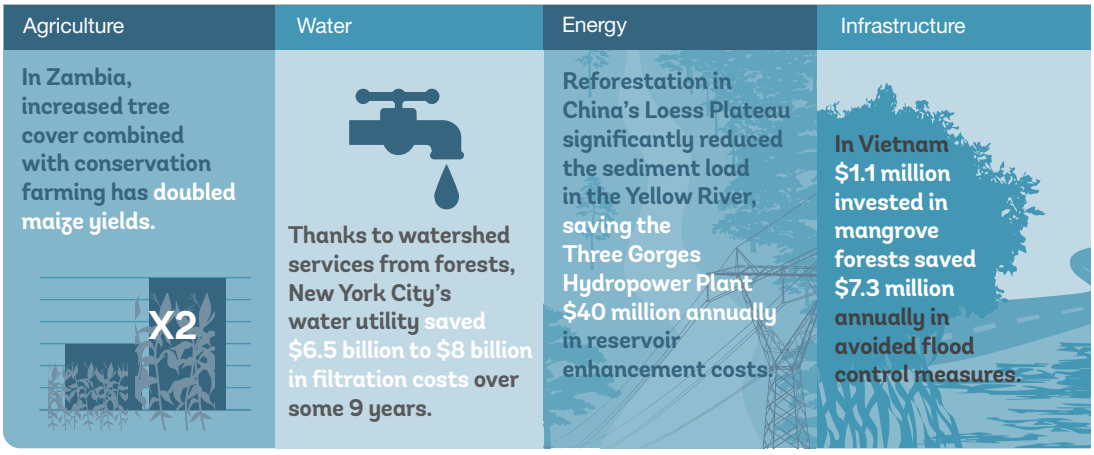
Forests, especially primary forests, are among the most important repositories for terrestrial biological diversity. Together, all types of forests offer diverse habitats for plants, animals, and microorganisms. Biodiversity presents opportunities for medicines, food, raw materials, and employment.

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.[8]

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, in terms of economic gain or cost avoidance (see figure 1.3). For example, the reduction in sedimentation in the Three Gorges Hydroelectric Power Plant in China, which resulted from large-scale reforestation in the upper watershed, greatly reduced the enhancement costs of the reservoir that were needed to cope with a heavy sediment load[9] (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 the productivity and resilience of farming systems, and reducing damage from flooding and sea level rise. Forests and trees increase local streamwater flow levels while reducing storm runoff, buffering agricultural production from the impacts of periodic interruptions in seasonal rainfall.

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 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

FIGURE 1.3 Examples of the Value of Forests' Ecosystem Services

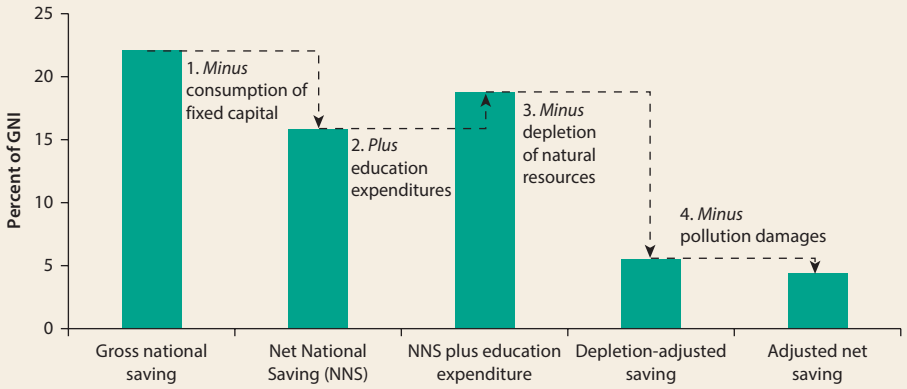


Sources: World Bank (2013). Hansen et al. (2011). Zhao-Yin, W.et al. (2014). International Federation of Red Cross and Red Crescent Societies (2002).

BOX 1.1 Forest Depletion in Uganda: Significant Toll on Long-Term Growth Sustainability

Figure B1.1.1 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.

FIGURE B1.1.1 Adjusted Net Saving in Uganda, 2013



Source: World Bank 2015.

skilled workforce and natural resources such as forests, fossil energy, metals, and minerals. Through this approach, the indicator provides national decision makers with a clear, relatively simple assessment of the sustainability level of their countries' growth policies.

Forests Sustain Cultures and Spiritual Values

A full appreciation of the benefits and services provided by forests also calls for 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. Although they are difficult to quantify, these values are undeniably real. The traditional knowledge held by forest communities, and particularly by indigenous peoples, has contributed to preserving biodiversity-rich forests for countless generations. Although it 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, in chapter 2, on community forests in Mexico).

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 mineral 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,[10] reducing annual net forest loss to 5.6 million hectares. But this still amounts to a loss of forest area larger than the size of 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. Although forests still face major challenges, opportunities have emerged that could transform the way they are managed.

Climate Change

Challenge. The current and projected impacts of climate change, including but not limited to rising temperatures and increasingly unpredictable precipitation patterns, increase the vulnerability of forests to pests, diseases, and fires. At the same time, forest loss affects 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, which 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 household energy gaps as a renewable energy source, enhance climate resilience, and mitigate GHG emissions while taking pressure off pristine forests.

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 or other land uses. This development model is usually referred to as the "forest

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, caused by 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 the area of natural forests by 80 percent.

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 forests.

Opportunity. A forest-smart, multisector or landscape approach considers forests and the services they provide to be key elements of the Sustainable Development Agenda. This translates into decisions on land use 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 on the long-term impacts of potential decisions on forests can inform discussions on trade-offs in land use planning.

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 cubic meters in 2012 to 4.5 billion cubic meters in 2050. This rising global demand for timber and other forest products risks fueling unsustainable and often illegal timber trade flows. Planted forests can represent a promising option to fill the gap in timber supply. However, poorly designed planted forests can lead to the degradation of critical ecosystems, erosion of the ecological services delivered by these ecosystems, and lack of respect for the rights and interests of local communities.

Opportunity. Since 2000, the area of planted forests has increased considerably. Planted forest area now accounts for around 7 percent of the total area of global forests—some 280 million hectares. The area continues to increase at a rate of around five million hectares per year, through afforestation as well as 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 the sustainable management of forests—natural and planted—in southern countries.

Forest Governance

Challenge. Estimates indicate that industrial hardwood timber of questionable origins might constitute 23–30 percent of global supply, and the availability of illegal supply depresses prices by 7–16 percent. Illegal logging on public lands results in estimated losses in assets and revenue in excess of $10 billion annually. Because of its value and scale, illegal logging is also a driver of wider systemic corruption and can fuel conflicts and threaten security.[11]

Opportunity. Progress has been made over the past 10 years in tackling illegal logging,[12] resulting from a combination of actions taken at the international and national levels to monitor and track illegal activities.[13] However, forest governance requires continuous efforts to tackle emerging challenges through policy changes, strengthened institutions, and enhanced monitoring systems. New information and communications technologies (ICTs) provide opportunities to monitor forest cover in almost real-time, allowing for the 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).

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). The amount needed to supply the world's need for wood products alone is about $50 billion. Mobilization of 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). Although private financing is promising, it is not yet distributed evenly across regions, and the potential in many developing countries has yet to materialize.[14]

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 high-income countries. Some countries in Latin America[15] 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 will require a robust regulatory framework that ensures that forest investments are done in an environmentally friendly and socially responsible way.

Rights Over Forests

Challenge. The widespread pressures on natural forests—human-made (for example, incursions by loggers and deforestation) or natural (for example, 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 subsequently chosen to allocate these rights to investors in the forest 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.[16] 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 among forest-dependent households.

Notes

1. 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 represents the most important rural domestic fuel. In large parts of Sub-Saharan Africa, conventional biofuels represent about 90 percent of the rural energy supply, and in China, they represent 70 to 80 percent (IUFRO 2015; IEA 2006).
2. 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).
3. Measured as US$1.25 per day in purchasing power parity terms.
4. Based on results from the PEN survey.
5. Many forest products are more resilient to climate variability and extremes than crops, and therefore are crucial to the resilience of local livelihoods.
6. Mangrove forests stabilize the coastline and reduce the height and energy of wind and swell waves passing through them, and hence diminishing their ability to erode sediments and cause damage to coastal infrastructure.
7. 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).
8. Migration has been one of the most observed strategies for plants and animals to cope with changes in temperature and precipitation patterns, and is expected to amplify (Neilsen et al. 2005).
9. 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.
10. While forest cover has globally decreased, some regions have shown significant increases in response to different land use dynamics. In Central Europe, the forest cover increase is generally 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, forest area has been on the decline.

11. Interpol has linked illegal charcoal production and terrorist groups. According to its estimates, in East Africa a terrorist group can earn $38 million to $56 million a year solely from the illegal charcoal trade. In Africa overall, these groups can make $111 million to $289 million a year from the illegal or unregulated charcoal trade.
12. 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).
13. Such actions include legality schemes (such as the Forest Law Enforcement, Governance and Trade program and the FLEGT and Lacey Act), procurement regulations, and forest certification.
14. Obstacles include higher real and perceived risks in investing in developing countries than in high-income ones.
15. 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).
16. 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.

2. Focus Areas and Cross-Cutting Themes

Summary

The Forest Action Plan FY16–20 builds on and strengthens the World Bank Group (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 forests 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 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 Forest Action Plan, the WBG aims to boost the potential of the forest sector to lift people out of poverty and generate lasting economic returns in clients' countries. It will also support client countries in defining development pathways that fully take into account the importance of their natural capital. In forest-rich countries, the World Bank will aim to minimize the 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 to support clients' efforts to restore this capital and associated services through multisector engagements. In all cases, an integrated landscape approach will guide WBG engagement.

World Bank Group Value Proposition

The WBG 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 and figure 2.1. The Forest Action Plan (FAP) will guide WBG interventions over the next five years.

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?

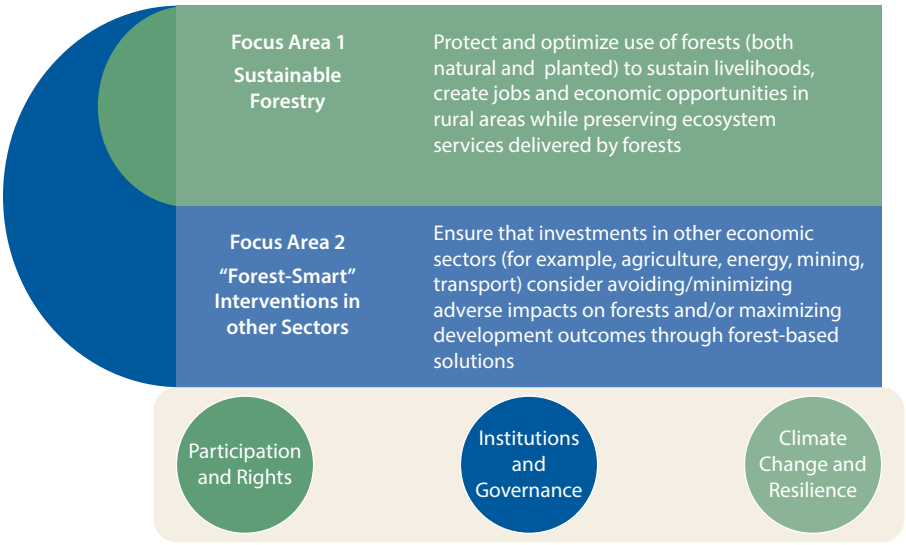
FIGURE 2.1 Potential of Forests to Contribute to the WBG's Goals

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's Forest Action Plan FY16–20. The FAP builds directly on the 2002 WBG Forest Strategy (*Sustaining Forests*), which defined three interdependent pillars that are still deemed relevant in guiding the WBG's 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 Forest Strategy for the next five years. It proposes priority areas of engagement for the WBG and identifies two focus areas and three cross-cutting themes (see figure 2.2). These priority areas build on an in-depth assessment of the WBG's forest portfolio over FY02–15, using the lessons learned and experience gained over the past decade (see appendix A), as well as a detailed analysis of the emerging demands from clients. This exercise has helped prioritize key intervention areas where the WBG already has a credible track record or potential to grow, based on comparative advantage. The Forest Action Plan FY16–20 has been prepared as a joint effort of the entities of the WBG—World Bank, International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA)—with the objective to maximize the complementarity and impacts of the interventions of the three entities. The FAP has also benefitted from inputs from various stakeholders.

FIGURE 2.2 Forest Action Plan Focus Areas and Cross-Cutting Themes



The FAP articulates the WBG's value proposition on forests. In particular, it responds to priority actions identified by countries in their NDCs to the United Nations Framework Convention on Climate Change (UNFCCC). In that sense, the FAP fully aligns with the WBG Climate Change Action Plan.

In practice, the distinction between the 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, the 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 FAP. 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.

Focus Area 1: Sustainable Forestry

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 high-income 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 (such as wood-based energy, construction, and poles) 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 diversification of the supply through reforestation/afforestation and planting trees on farms. In addition, producers need to be effectively connected to consumers through sustainable value chains.

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

Protect and Optimize the Management of Natural Forests

Forests have the potential to support job and wealth creation for forest dwellers in many different ways: products extracted from 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, the protection of natural habitats and associated biodiversity is understood as a core of countries' wealth. However, in many countries, this potential is not fully tapped. The WBG will aim to support clients in unlocking this potential through a variety of potential supports.

Participatory Forest Management

Participatory forest management has been a key focus of the World Bank's work in many countries, such as the Lao People's Democratic Republic, Mexico, and Turkey (see box 2.1). In these countries, the World Bank has helped

BOX 2.1 Community-Based Management of Forests in the Lao People's Democratic Republic

The World Bank has supported community-based management of forests in Lao PDR for more than 20 years. These efforts have shown significant impacts in poverty alleviation in forested areas, through the enhanced involvement of communities and benefit-sharing schemes. The current Sustainable Forestry for Rural Development project (combining World Bank and Forest Investment Program resources for a total of $31.8 million, with technical assistance from the Government of Finland) supports the participatory sustainable forest management approach. The project covers 2.3 million hectares located in 41 production forests in 13 provinces. The project works with provincial, district, and local authorities to improve the livelihoods of more than 400,000 rural community members in more than 1,000 villages.

support innovative arrangements that give local communities a much larger stake in forest management and the rehabilitation of degraded woodlands, pastures, and watersheds. Such interventions have had significant impacts in poverty alleviation and economic opportunities.[1] However, to yield the expected results, the interventions need to cover the dimensions of rights and access.

Many countries (including such diverse countries as Indonesia, Moldova, and the Russian Federation) have decentralized their forest management to local authorities at different levels.[2] Although these models were intended to bring forests closer to local control, they were seldom matched with the needed transfer of resources or technical management capacity.

Key Actions: Building on successful experiences, the World Bank will aim to continue supporting the 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 address only partially 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 into the value chain and market access. In Eastern Europe and Central Asia, the specific focus could be on accompanying the decentralization of the forest management functions, ensuring an adequate transfer of funds, and strengthening 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 and humidity) can be expected to have a drastic effect on forest health and increase vulnerability to shocks. This will require adaptive silvicultural management techniques to cope with the 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

BOX 2.2 Promotion of Better Forest Management Practices in Belarus

The objective of this 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 fires once started; as well as 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 will reduce future losses by 30 percent.

(see box 2.2). Building sound databases on forest resources and robust monitoring systems will also remain key areas of focus. The World Bank will carefully consider any new potential engagement in forest concessions by assessing ex ante the economic, social, and environmental impacts through Strategic Environmental and Social Assessments (SESAs).

Sustainable Production of Non-Wood Forest Products

Beyond timber products, forests provide essential 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 consumption levels when agricultural or other outputs fall.[3]

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, so that most activities are excluded from the formal sector. Building on the extensive work done over the past two decades on regulations for timber products, the World Bank will support countries that are willing to frame regulations that can better accompany the development of sustainable NWFP value chains (see box 2.3).

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.

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

Forest-dependent communities are among the most marginalized in the world. Deforestation has an impact on their surroundings and livelihoods. A new Dedicated Grant Mechanism (DGM), designed by and for those communities and financed by the Forest Investment Program (FIP), puts indigenous peoples and local communities in charge of the 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 non-wood forest products, and assists in the production and commercialization of handicrafts in the Cerrado region.

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. For decades, a widely held view was 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.[4] In addition, biodiversity is not only found in natural forests under protection status; biodiversity 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 to support its clients' efforts to establish and manage their protected forest 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 FAP, this trend will be reinforced with the push for more integrated interventions, where protected areas are fully embedded into a broader landscape.

Nature-Based Tourism

Nature-based tourism (or ecotourism) is becoming an increasingly important subsector in some developing countries, generating significant revenues for governments and local communities. Natural forests and associated biodiversity often feature high in nature-based tourism 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).

BOX 2.4 Nepal: Urgent Need to Rebuild 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 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 protected areas. This leaves the local communities who live in the buffer zones of protected areas and 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 communities in the buffer zone to get back on their feet is an immediate need, not only for recovering from the earthquake, but also for restoring and enhancing a principal source of economic growth in Nepal. In June 2015, the Government of Nepal requested World Bank support in restoring nature-based tourism and livelihoods in and around the earthquake-affected protected areas.

Key Actions: The WBG will support clients that are interested in materializing the potential of nature-based tourism as a key contributor to their economies. To 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. The WBG is uniquely positioned to present comprehensive support to clients that are interested in 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).

Payment for Ecosystem Services

Healthy forests and trees 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, Colombia, Costa Rica, and Mexico, 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" who preserve the forests and associated services. These PES programs have shown results in providing incentives for behaviors that support more sustainable management of forest resources; in many countries, the programs 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 global public goods,

especially forest biodiversity. The WBG has supported the establishment and further refinement of most of the existing PES schemes in place today in Latin America. The ongoing work conducted under the Wealth Accounting and the Valuation of Ecosystem Services (WAVES) initiative[5] also helps construct a better understanding of the value of the 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 World Bank will continue to support the setup of PES schemes in interested countries. Demand is emerging from other regions (particularly Africa), and technical support as well as cross-fertilization through South-South exchange will be promoted. The World Bank will also continue to pilot 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 (Reducing Emissions from Deforestation and Forest Degradation, Conservation of Forest Stocks, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks, REDD+), promote sustainable management of forests, and enhance forest carbon stocks. Phase 3 of this mechanism[6] 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 past decade. The experience from the first two tranches of the BioCF has demonstrated that carbon payments can represent a substantial addition to the disposable income of forest dwellers. Applying the lessons learned from these pilots to the third tranche of the BioCF (the Initiative for Sustainable Forest Landscapes, ISFL) and the Forest Carbon Partnership Facility (FCPF) Carbon Fund, which 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,[7] 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.[8]

Encourage Sustainable Plantations and Tree Planting

Economic development, coupled with population growth and urbanization, increases the demand for forest products, which is projected to grow dramatically in the coming decades. The annual demand for global industrial roundwood is projected to quadruple by 2050, from 1.5 billion cubic meters in 2012 to 6 billion cubic 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 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 ecosystem services through reforestation and tree planting, while delivering the triple win of improving rural livelihoods and food security, increasing climate resilience, and helping in the 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 over the past decades, primarily led by the private sector, to grow plantations. 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 with 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.[9] As the area of intensively managed plantations grows, and to ensure that the (social, economic, and environmental) potential of planted forests 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 clear prospects that production is shifting from high-income countries to developing countries, private investments will shape the way forests are managed in developing countries. Although this development offers tremendous potential for boosting the forest sector's contribution to the rural economy in those countries, it will need to be managed with strong environmental and social safeguards for the investments to be 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 entities of the WBG 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 in 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 measurably pro-poor.[10] MIGA can unlock potential investments by reducing the risks associated with them. Such collaboration between the public and private sector arms of the WBG 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.[11]

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 directly and indirectly (see box 2.5).

In African countries, private woodlots respond to the growing demand for wood-based energy. The rising price of wood, caused in part by 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 woodlots reduce farmers' vulnerability to shocks (for example, price or climate shocks).

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 in identifying and tackling barriers to developing small-scale plantations and tree planting. Barriers can include

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 percent; Quang Nam: from 22.8 to 18.2 percent; Quang Ngai: from 22.5 to 17.6 percent; and Binh Dinh from 16.0 to 13.5 percent). 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, from which timber with the certification earns a 30 percent premium. The project has 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 farming households, 98 percent of whom have met their repayments. The project included the provision of technical assistance in business planning and harvesting.

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

The first phase of the Strengthening Public Expenditure Management Program/PROGEDE was launched in 1997 and closed in December 2004, having fully achieved or surpassed all its objectives and development outcomes and outputs. PROGEDE was rated as highly satisfactory. The sustainable fuelwood 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 substitution options component of the project 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. This component of the project also benefited several hundred urban-based traders, including charcoal wholesalers, charcoal retailers, and stove artisans.

insecure land/tree tenure, limited technical knowledge and financial capacities of smallholders, and insufficient market information. Demand is emerging from several countries—for example, Colombia, Côte d'Ivoire, and Ghana—that are willing to encourage small-scale plantations. Building on the 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. For example, in the Europe and Central Asia 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.

Support Sustainable Forest Value Chains

To respond to the growing demand for timber, diversification of 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 strategy opens opportunities for different types of enterprises to respond to different types of markets through different models.

Small and Medium-Size Forest Enterprises

SMFEs offer important opportunities to promote nonfarm 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, SMFEs can account for up to 80–90 percent of employment in all forest enterprises, formal and informal, and contribute to a large share of the demand for timber at the domestic level. SMFEs 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, and 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 limitations 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).

Key Actions: Building on the 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 (the Environment and Natural Resources and Trade and Competitiveness Global Practices (GPs) as well as IFC and MIGA) to support the development of SMFEs. In particular, it will help them to tap the investment and technical capacity needed to overcome their constraints (technical and 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 financing from the Program on Forests (PROFOR).

BOX 2.7 Competitiveness of Community Forest 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 past 25 years, many Mexican forest communities have managed to develop reasonably successful commercial community forest 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 runs even less-advanced forest businesses.

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

Source: Cubbage et al. 2013.

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 production to processing and 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 build on partnerships with smallholders (out-grower schemes). If properly managed, partnerships between smallholders and large-scale operators can yield positive development results. However, although private financing is promising, obstacles to investments (including high risks, real and perceived) have hampered the full materialization of the potential so far in most developing countries.[12]

Key Actions: Private investment represents a great opportunity for the entities of the WBG to come together to support responsible investments in forest value chains. The World Bank can help establish investment environments that are conducive to investors; the IFC can partner with responsible private sector investors to expand investment in the forest value chain; and MIGA can mitigate the potential risks associated with investments in the forest sector. Under this key action area, the IFC will lead WBG engagement in investing in integrated value chains:[13] This engagement can involve small- and large-scale operators and bring together communities and companies through partnership arrangements, build small and medium-size enterprises, or enable socially responsible corporate investments. The following priority

countries have been identified for this effort: Belarus, Colombia, Indonesia, Mexico, Mozambique, and Tanzania for forest/wood products, and Brazil, China, India, Mexico, Russia, and Turkey for pulp and paper.

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. At the same time, forests deliver ecosystem services that are essential for sustaining 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 WBG 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).

BOX 2.8 The Sahel and West Africa Program: Example of an Integrated Landscape Approach

The Sahel and West Africa Program (SAWAP) is a flagship for the integrated landscape approach. The program 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—re-greening 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, multisector 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 (International Development Association, Global Environment Facility, Forest Carbon Partnership Facility, government contributions, and other trust funds) to build a comprehensive financial package—thus ensuring a long-term, programmatic, and coordinated approach to investing in resources and ecosystems to address landscape priorities.

The forest-smart approach clarifies the dynamics between various land uses, including forests, and is essential for 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 also will proactively seek win-win solutions where both are fully integrated in the design of the interventions.

While the first focus area can be seen as the "traditional" WBG engagement in the forest sector, this second focus area offers new perspectives and forms of engagement at the territorial level. This focus area responds to the growing demand from client countries that are looking for new mechanisms to understand and address the 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 Areas (CCSA), 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 (agriculture, forestry/agroforestry, mining, energy, and transport) in a multidisciplinary and coordinated manner. In addition, Focus Area 2 provides an opportunity to pursue a coordinated public/private approach to forest-smart Investments, through enhanced coordination between the World Bank, IFC,[14] and MIGA.

The FAP proposes a two-pronged approach to forest-smart interventions: 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 design and implementation.

Inform Decision Making on Land Use

For development to be forest-smart, decisions about investments in forests and 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 approach also enables the identification of additional development co-benefits that can be incorporated into planned interventions.

Forests as a Key Element of the Sustainable Development Agenda

The WBG 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 standing forests and their biodiversity, as well as 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 to expand 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 Environment and Natural Resources GP, with support from other GPs and in coordination with respective country management units (CMUs), will 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 sector investments on natural forests. This effort will also highlight opportunities for improved land use management, especially through restoration. Whenever possible, these notes will directly feed into the strategic diagnosis exercises conducted at the national level, and will inform WBG engagement in priority countries. The notes will enable 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.[15] 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.

The 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.[16] It is expected that by 2020, at least 20 Country Forest Notes[17] would be prepared. Financing for these exercises will be leveraged from different sources, particularly existing forest-related trust funds (such as the FCPF, BioCF, Forest Investment Program (FIP), and PROFOR), but also, when available, from the World Bank's 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. This understanding will help in defining 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. Land use planning calls for a geographic and 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 objectives of economic growth and provision of ecosystem services while protecting human well-being.

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.[18] Decision-making processes thus often rely on partial and sometimes outdated information.[19] This situation results in many overlapping land uses, which may lead to conflicts. Cross-sector platforms and information sharing are prerequisites to foster integrated territorial landscape planning, defining clear boundaries across the various land uses. Innovative ICT tools can facilitate the integration of databases and equip governments and stakeholders with the necessary tools to support land use planning.

Good land use plans should give particular attention to protecting high-value forests (in biodiversity, watershed functions, carbon stocks, and cultural values, in particular). Optimally, economic development that triggers 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, areas that can coexist with other land uses, and 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 the need for costly and uncertain mitigation schemes 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, the impacts on high-biodiversity forest areas are sometimes not avoidable. To achieve "net gains" from forest biodiversity and after avoidance and other forms of mitigation have been 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 aggregated biodiversity offset schemes ex ante.[20]

Key Actions: The WBG will support clients that are willing to understand the interlinkages between the different land uses and 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 on forest cover of various economic scenarios on a 2030 horizon (see box 2.9).

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 land (based on the most up-to-date information related to population settlements, status of the existing forests, level of degradation, and potential productive capacity of the land). The plans would also contribute to reducing problems resulting from overlapping usage titles (and potentially conflicting land uses).

BOX 2.9 Modeling Deforestation Trends in the Congo Basin to Inform Policy Makers

The population of the Congo Basin is expected to double between 2000 and 2030, to 170 million. The people will need food, energy, shelter, and employment. Historically, deforestation rates in the Congo Basin have been among the lowest in the tropical rainforest 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 2012–13, a study was conducted to analyze deforestation dynamics in the Congo Basin and the resulting greenhouse gas emissions by 2030. The 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 because of a combination of various factors, including growing population, conversion into agricultural uses for major crops, and enhancement of road networks.

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 the 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 that is usually observed in the forest transition curve. A series of recommendations has been discussed with representatives of the Congo Basin countries and is now undergoing more in-depth assessment at the country level.

Source: Megevand et al. 2013.

Such work on land use planning also has the potential to ease the IFC's work with private sector investments. The 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.

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 different GPs (such as Agriculture; Water; Energy and Extractives; Social, Urban, Rural, and Resilience (SURR); and Transport) (see appendix A on Learning from the World Bank Group's Forest Portfolio). Cross-GP collaboration will support forest-smart interventions that will offer solutions to complex challenges related to potentially

competing land uses, helping the GPs to define operational responses to the various 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 the World Bank's Safeguard Policies[21] and the IFC's Performance Standards, all projects are systematically reviewed early in the project preparation process for identification of potential adverse impacts on forests. Through the Safeguard 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). For example, in Latin America and the Caribbean, a knowledge platform has been developed to support environmentally sustainable infrastructure construction.[22]

BOX 2.10 New Tools to Inform Decision Making on Infrastructure—Example from Road Rehabilitation in the Democratic Republic of Congo

Transport infrastructure in the Democratic Republic of Congo is among the sparsest and most dilapidated in the world. There is thus an urgent need to improve interprovincial as well as intraprovincial 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 Democratic Republic of Congo for generations to come. This suggests the need for careful planning and holistic decision-making tools that take into account 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 (geographic information system) 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.

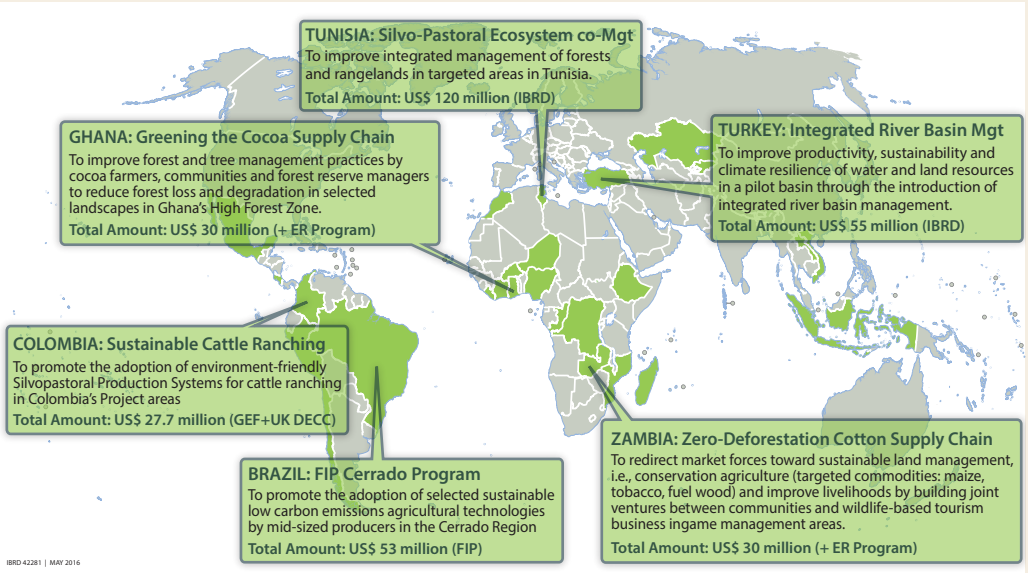
Source: Damania and Wheeler 2015.

Beyond safeguards and standards, the WBG aims to promote forest-smart multisector programs: the new organizational structure, based on sector GPs and the CCSA, aims to enable effective delivery of multisector 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 the Democratic Republic of Congo (see box 2.12), and 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, multisector programs promoting forest-smart development, mobilizing various sources of financing (IDA/IBRD, climate funds, and other trust funds).

BOX 2.11 Some Examples of the Growing Agenda on Integrated Landscape Management

The WBG's portfolio on integrated landscape management is growing rapidly, with more than 25 active operations (under preparation/implementation) in Latin America (Brazil, Chile, Costa Rica, Colombia, Mexico, and Peru), the Middle East and North Africa (Tunisia and Morocco), Africa (Burkina Faso, Côte d'Ivoire, the Democratic Republic of Congo, Ethiopia, Ghana, Liberia, Madagascar, Mozambique, Niger, Nigeria, the Republic of Congo, and Zambia), Southeast Asia (Indonesia, the Lao People's Democratic Republic, and Vietnam), and Europe and Central Asia (Kazakhstan, Kyrgyz Republic, and Turkey). Map B2.11.1 includes just a few examples of this approach.

MAP B2.11.1 Integrated Landscape Management Operations



Note: ER = Emission Reduction; FIP = Forest Investment Program; GEF = Global Environment Facility; IBRD = International Bank for Reconstruction and Development; UK DECC = United Kingdom Department of Energy and Climate Change; WBG = World Bank Group.

Agriculture and 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. The landscape approach blurs the traditional frontiers between farms and forests. Rather, through 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 use.

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). The portfolio combines activities that aim to introduce trees in farmland (through agroforestry and/or silvopastoralism) or to change agricultural practices so that they do not come at the expense of 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, 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 the Agriculture, Water, and SURR GPs is central to delivering on this agenda, as well as with the CC-CCSA, as most of the programs are expected to have a "climate finance" window.

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, rail, 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.[23] The direct impacts (such as the direct footprint or clearing land for road or other transport infrastructure construction) can be easily identified and mitigated (through compensation plantations).[24] The indirect and induced cumulative impacts resulting from boosting economic activities in the areas served by transportation have a potentially much larger scope and are much more complicated to quantify.

The vast majority of the WBG's current transport portfolio involves rehabilitation of existing surface transport infrastructure rather than the construction of new infrastructure. This is to maximize the use of existing infrastructure in capacity and cost effectiveness and efficiency. Although rehabilitation investments may come with minimal direct impacts (because of preexisting structures), they can drastically change the economic profile of the areas affected, and generate significant induced impacts on natural forests in the medium and longer term. 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 kilometers straddling the road (Damania and Wheeler 2015; box 2.10). The magnitudes of these impacts differ significantly, depending on the type of transportation mode (road, railway, or fluvial) that is being improved.

Cross-drainage investments are a major cost factor in transport projects, such as roads and rails, and appropriate forest management in the upstream catchments of stream and river crossings can reduce the risks of erosion and landslides on linear transportation infrastructure. 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.

BOX 2.12 Pro-Routes Project in the Democratic Republic of Congo: 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. The project incorporated fairly robust mitigation measures, involving particularly close and proactive engagement with local communities. A whole component of the project was dedicated to 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.

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

- At the design stage, the use of SESAs, building on spatial and economic prospective analysis, can be instrumental in modeling the induced impacts on forests and identifying alternatives that could lessen such impacts. For instance, trajectories can be adjusted to avoid ecosystems with high-biodiversity value. Such an upstream analysis can also unveil the options for a multimodal network as an alternative to all-roads. SESAs should 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 design of the operation 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 Democratic Republic of Congo. 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 to the design and implementation of infrastructure projects.[25] For example, in Kazakhstan, a forest 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.

Dams and Hydropower. As demand for water regulation, irrigation, and energy access increases, more investments in dams and hydropower facilities are being made in developing countries. These investments provide services to growing populations and economies, but they can impose a significant toll 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.[26] 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 lifespans 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—storage-backed and run-of-the-river) are intrinsically linked to the health of their catchments. Well-forested catchments[27] 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.[28] Deforestation changes the catchment hydrology and can increase erosion, affecting 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 more systematic monitoring). In addition, the Environment and Natural Resources GP, along with the CC-CCSA, will support task teams in identifying potential innovative financing (such as for climate mitigation and adaptation or GEF), to enhance forest-related investments in the associated watersheds.

Wood-Based Energy

Fuelwood represents the main source of energy for cooking and sterilizing food for about 2.4 billion people in developing countries, and it is likely to remain so in future decades. In Sub-Saharan Africa,[29] 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 fuelwood 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 developing countries, fuelwood often accounts for up to 50–90 percent of all energy used.

The fuelwood sector in many developing countries operates informally and inefficiently, using outdated technologies, which limits the benefits to communities and delivers little official revenue to the government. The unsustainable harvesting of fuelwood 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 that 4.3 million deaths a year worldwide are attributed to diseases associated with cooking and heating with solid fuels, with a particularly high toll on children and women[30] (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 fuelwood 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.[31] 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 European Union and North America use wood energy in the form of chips or pellets, where it can be a clean and carbon-neutral fuel alternative to fossil fuels.[32] With increasing demand for wood energy in high-income 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 the promotion of sustainable production of wood to the dissemination of clean cookstoves. The Energy GP, together with the Environment and Natural Resources and Health GPs, has recently launched a program on Efficient, Clean Cooking and Heating, under the Energy Sector Management Assistance Program.

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 has already had successful experiences with the fuelwood supply chain (see box 2.6 on Senegal). Important new developments include the emergence of new, cleaner cooking solutions (stoves and fuels), innovations in business models, and increased 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 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 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 forest concessions often overlap. This is largely because of inconsistent levels of transparency and coordination across the natural resource sectors, and lack of clear land use planning at the territorial level. In addition, many foresters have found artisanal mining camps inside their concessions. Despite strong government focus on large-scale mining, the artisanal and small-scale mining sector is still by far the largest mining sector in most developing countries (in employment, mostly informal) and can conflict with forest activities.

Although 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, which 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 reestablishing productive forests on mined lands. Such activities can generate economic value for landowners and communities, as well as enhance environmental integrity, by accelerating the restoration of ecosystem services, such as watershed protection, water quality enhancement, carbon storage, and wildlife habitat.[33]

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 works supported by the World Bank is already ongoing, exploring innovative approaches to help developing countries optimize the use of their mineral potential without jeopardizing forest capital or the rights and interests of communities. SESAs can also be instrumental in orienting the design of mining operations, as well as the associated infrastructure (see box 2.13).

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 an enabling environment provided through the government. Aggregated offset schemes would benefit the conservation of forest resources and 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 2.13 Promoting Forest-Smart Interventions in the Mining Sector—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 that is 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 greenhouse gas emissions from deforestation and forest degradation during exploration, exploitation, and rehabilitation activities.

The West Africa Minerals Sector Strategic Environmental and Social Assessment (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.

BOX 2.14 National Biodiversity Offsets Scheme: Road Map 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, the sector can also be a threat to the last extensive forest areas in West Africa. The Guinean Forest, which 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 the report 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 to be used by all (mining) companies, to ensure that the conservation offsets they are implementing are coordinated at the national level to increase their cumulative impact and follow the national interest, rather than being done disjointedly on an investment-by-investment basis.

Source: Arrobas et al. 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 artisanal mining can contribute to employment opportunities as well as state revenues, with minimized impact on the environment. In Gabon, Liberia, and Madagascar, for example, innovative approaches to engaging artisanal and small-scale mining communities that are operating in protected forest landscapes were examined; the goal was 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 Brazil and Colombia, environmental management of artisanal mining sites was part of a Mining and Energy Technical Assistance. There is also interest from some client countries, particularly in the Africa and Europe and Central Asia regions, to support reforestation to reclaim old mining sites and transform the areas into functional ecosystems.

Cross-Cutting Themes

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 in society. Climate finance has the potential to be transformational in how forested areas are valued and used.[34]

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

Agreement. As a result, more than 90 countries included forest and land use changes in their NDCs to address climate change.

While the global community has focused in the first instance on reducing forest loss and degradation, there is now greater focus on how to reverse these processes and build productive and resilient landscapes that 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 FCPF, FIP, and BioCF (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. The IFC's Sustainable Business Advisory group will continue to work directly with firms toward low-carbon business models.

More focus will be given to the contribution of forests and trees to the agenda on adaptation and resilience to climate change. The World Bank's portfolio already contains several 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 (PPCR) 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 Bangladesh and China, 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 its programmatic approach, the WBG aims to offer a comprehensive technical and financial package that responds to clients' needs to pursue forest-smart development trajectories. This approach aims to support countries in driving transformative interventions in forested landscapes, by blending trust fund resources (including climate finance) with IDA/IBRD resources as well as IFC investments into a more ambitious offer (see chapter 3). It is expected that by 2020, this 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, has adopted the International Finance Institution Harmonization Framework for project-level GHG accounting. Starting July 1, 2014, all forest-related investment operations are now subject to GHG accounting, and tools have been made available to teams to comply with this new requirement.[35]

Rights and Participation

Clear ownership, access, and management rights over forests are vital for good governance and sustainable management of resources. Although most forests remain publicly owned, forest ownership by private actors, communities, and individuals has increased. A growing body of research 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 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.

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

Key Actions: A substantial share of the World Bank's forest-related portfolio over the past 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 that are willing to strengthen and expand local rights of use and access over forest resources, with a particular focus on indigenous groups. The World Bank will help its clients to improve land tenure laws and regulations and modernize land administration systems. The focus on decentralized forest management and community-based and participatory forest management will remain strong across the WBG portfolio.

The WBG is mainstreaming citizen engagement in its interventions to give stakeholders the opportunity to participate fully 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,

BOX 2.15 Strategic Framework for Mainstreaming Citizen Engagement in World Bank Group Interventions

Citizen engagement is defined as the two-way interaction between citizens and governments or the private sector within the scope of World Bank Group (WBG) interventions—policy dialogues, 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. Therefore, information-sharing and awareness-raising activities alone 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 et al. 2014.

the WBG will support the effective participation of stakeholders in land use planning exercises to promote forest-smart development trajectories (as presented under Focus Area 2). The trade-offs among different sectors and within sectors need to be carefully assessed and clearly understood by the 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.

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). It is expected that the forest portfolio will remain 100 percent gender-informed, with the target of meeting all three criteria. Systematic screening of operations at the design stage will help in identifying the various entry points that could be used to reduce inequalities between men and women in the forest sector, including secure tenure on forest resources, participation in decision-making processes, and access to economic opportunities (see box 2.16).

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 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 World Bank operations.[36]

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

The first Sustainable and Participatory Energy Management Project (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 in the equal participation of men and women.

PROGEDE II was designed to build on the important achievements under PROGEDE I, but also to address the gender gap by including gender equality goals in the project design. With gender disparity in mind, PROGEDE II initiated a reform of 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 structures. Furthermore, women increasingly participate in training sessions on forest cutting and carbonization techniques, pursuits that formerly were dominated by men in accordance with the traditional gender roles governing the division of labor.

Source: Hammond et al. 2015.

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, to create a shared development agenda. The dialogue was held in the context of the World Bank's Safeguard Policy to update and review processes.

The World Bank's dialogue and engagement process has yielded promising results in a renewed and stronger relationship between the World 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 April 13–15, 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 World Bank's road map for a future partnership with them.

Institutions and Governance

Over the past 25 years, forest management has improved dramatically through better planning, knowledge sharing, legislation, and policies.[37] Despite this positive trend, much remains to be done in developing countries to ensure that forest institutions have the necessary capacity to foster the sustainable management of forests, and 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. The overall impacts on forest governance are usually the result of the combination of various factors (local and global). Building on the lessons learned from the FY02–15 forest portfolio, the FAP identifies areas of interventions where the WBG has a comparative advantage and can support client countries in advancing 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 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, and 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.[38] Illegal logging can drastically affect forest-dependent communities and 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. Because of its value and scale, illegal logging is also a driver of wider systemic corruption.[39]

To respond to the evolving contexts and emerging challenges, institutions constantly need to adapt and forest policies need to be adjusted. In many countries, forest institutions are not optimally designed, staffed, or financed to be able to manage large forest estates effectively. New technologies are now available and can be used to enhance information on forests and guide decision making. Technological changes and the declining costs of 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 forest management,[40] including timber tracking, chains of custody, forest cover monitoring systems, and budget management tools. The use of ICT can also significantly improve transparency and accountability, and reduce opportunities for collusion through the use of online auctions and sales systems.[41]

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

- *Improve the 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 evolve continually in line with changing circumstances. Improving forest governance also consists of eliminating the perverse incentives created through poor policy and regulation, as well as ensuring harmonization and cooperation across all relevant ministries and subnational agencies.

  Hence, the World Bank 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, it will be on simplifying existing regulations to facilitate sustainable business for the operators. In most countries, the articulation of forest laws/policies with other sector laws/policies constitutes a cornerstone for the 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 *Global Forest Resources Assessment* (FAO 2015), although 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 track forcefully and tackle ever-changing forms of illegality and 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 provider 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 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. The technologies 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 the sustainable management of forests. Special attention will be

given to early warning systems that can drastically reduce the adverse impacts of 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

Because of 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 the forest contribution to the national economy. This is in turn reflected in low budgetary allocations to the forest 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 exercise their mandate appropriately. In many cases, forest institutions depend on donors to cover the needs of the basic budget.

Key Actions: The WBG will aim to help countries to 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 to sustain long-term growth. The WBG will build on the extensive work done by WAVES on forest accounting, to illustrate the overall value of forests beyond marketed value. The WBG 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 environmental sustainability and economic growth in the region.

Monitoring Progress with Implementation of the Forest Action Plan

Monitoring of the FAP will align with the WBG's overall Scorecard and will accordingly report on three tiers.[42] Tier I reports on the long-term development outcomes that countries are achieving, Tier II reflects the results reported by WBG clients that are implementing WBG-financed operations, and Tier III covers operational and organizational effectiveness (see table 2.1). The systematic use of core sector 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 FAP will be reviewed annually, and a midterm review is planned for FY18.

TABLE 2.1 Tracking the Performance of the Forest Action Plan

Tier I *Long-term development outcomes*		**WBG development outcomes** (10–15 years)	End extreme poverty and boost shared prosperity in a sustainable manner.		
		Forest Action Plan	Tap the potential of forests and trees to contribute to the WBG's goals of ending extreme poverty and boosting shared prosperity in a sustainable manner.		
Tier II *Results reported by WBG clients implementing WBG-financed operations*		**Programs/ projects**	Focus Area 1: Sustainable Forestry	Focus Area 2: Forest-Smart Interventions in Other Sectors	Cross-Cutting Themes: Climate Change and Resilience, Rights and Participation, and Governance and Institutions
Tier III *Operational and organizational effectiveness*		**WBG delivery model**	Programmatic approach that combines various instruments (technical assistance, investment, and performance-based payments) supported by a mix of financing sources (IBRD/IDA, trust funds, IFC) wherever possible. For other countries, the project approach will be maintained.		

Note: IBRD = International Bank for Reconstruction and Development; IDA = International Development Association; IFC = International Finance Corporation; WBG = World Bank Group.

Notes

1. As per Implementation Completion Review reports of the various projects in these countries.
2. In some other East European countries, forests nationalized during the communist era were restituted to former private, institutional, and communal owners.
3. In Latin America, for example, Brazil nuts and Assai palm represent high commercial value and constitute a key contribution to household incomes; in Lao PDR, NWFPs are estimated to provide roughly 40 percent of household income nationally, and the figure rises to 90 percent among the rural poor.
4. 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.
5. Pilot countries include Botswana, Colombia, Costa Rica, Guatemala, India, Madagascar, and the Philippines.
6. 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.
7. The Paris Agreement explicitly mentions, in paragraph 55, the results-based payment for actions aiming at reducing emissions from deforestation and forest degradation.
8. 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).
9. Examples of bad plantations are 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.

10. In the upstream segment of the forest value chain, the IFC will focus exclusively on planted forests (and not on natural forests).
11. The World Bank is already responding to a growing demand for analytical work from the Governments of Colombia, Mozambique, and Paraguay, which are seeking support to define an appropriate framework based on international best practices for plantations.
12. 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.
13. Only 10–20 percent of the overall IFC commitment in the forest sector goes exclusively to the upstream segment of the forest value chain ("pure timberland").
14. 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.
15. This upstream approach would be complementary to the rigorous application of the World Bank's Safeguard Policy, which remains critical to identify, at the operational level, potential risks of investments to the environment, including forests, and to people.
16. By 2020, it is expected that the World Bank will have supported the preparation of the national REDD+ strategies in more than 50 countries.
17. The sequencing for the preparation of these Country Forest Notes will be based on the importance of the forests, the timeline of preparation of Systematic Country Diagnostics/Country Partnership Frameworks, the pipeline of WBG projects and programs, and the availability of funding. In some cases, these notes will be prepared at the subnational level.
18. Extractive sectors, for example, often have high-resolution information, including data on soil composition and water retention that can inform decisions in other sectors.
19. In many countries, forest maps inadequately report the forest area, ignoring encroachment dynamics that lead to forest degradation and deforestation.
20. 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 Australia and the United States. These schemes can unlock business potential while identifying measures to conserve forest and biodiversity resources for the long term.
21. 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.
22. See at www.kpesic.com.
23. A 2013 World Bank study on Dynamics of Deforestation in the Congo Basin showed transport as the most robust predictor of deforestation.
24. In many countries, compensatory afforestation is a requirement under the national laws.
25. Transport infrastructure investments in high-income countries usually include landscaping, shelterbelts, and tree planting programs on embankments and around bridges and intersections. These investments have several 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.
26. On the contrary, the adverse impact on forests is minimal in run-of-the-river hydropower systems or small dams in steep catchments.
27. Forests are also a water consumer and need to be effectively managed, especially in arid catchments.
28. 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.

29. 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.
30. It is the fourth worst overall health risk factor in the world, and the second worst for women and girls (WHO 2008).
31. 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.
32. 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 fuelwood in heat-only boilers and combined heat and power plants.
33. 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.
34. The marginal cost of carbon sequestration with afforestation and forest management is estimated to range from $10 to $37 per ton of CO2. The 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 to $180, declining to $35 to $70 per ton when technologies have matured (Al-Juaied and Whitmore 2009).
35. The Carbon Assessment Tools (CATs) for Afforestation and Reforestation, Sustainable Forest Management, and Forest Fire Management were consolidated into the Forest Carbon Accounting Tool in 2015 for ex ante GHG accounting in the investment projects targeting afforestation and reforestation and sustainable forest management activities. The ex ante Carbon Balance Tool developed by the Food and Agriculture Organization for GHG accounting in agriculture and forest projects is another tool that has been adopted for GHG accounting in the forest projects.
36. In most forest-related operations, specific components/activities that directly target indigenous groups are embedded in project design.
37. FAO 2015.
38. 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.
39. See footnote 13.
40. The 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.
41. 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.
42. The WBG 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 WBG institutions (see http:// corporatescorecard.worldbank.org).

3. Implementation of the Forest Action Plan FY16–20

Summary

This chapter describes how the Forest Action Plan will be implemented through six 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 track the results on forests; (iv) knowledge generation to improve decision-making process related to forests; (v) institutional adjustments to ease the delivery of transformative programs on forests; and (vi) partnerships to maximize impacts on the ground. These entry points have been identified through an in-depth assessment of the World Bank Group (WBG) forest portfolio over the FY02–15 period, as well as a detailed analysis of the emerging demands coming from clients.

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

Strategic Level: Upstream Assessments and Scoping

The WBG 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 the destruction of natural forests (as described under Focus Area 2 in chapter 2).

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 within the WBG and with country counterparts upstream in the programming process. The Environment and Natural Resources GP, which leads the work on forests, is committed to the preparation of Country Forest Notes.[1] 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 sector investments on natural forests, but also by highlighting the opportunities for improved land use management, notably through restoration. The notes will explore options to minimize the trade-offs of planned World Bank interventions on forests, by providing an innovative and integrated upstream analysis of policies and investments and

their potential impacts on forests. In the medium and long term, these inputs will foster a development model that aims to reconcile 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, in particular from forest-related trust funds (such as PROFOR, but also FIP, FCPF, and 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 World Bank's budget). The notes will largely use the extensive data that are 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.

Operational Level: 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. The shift is toward 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 CMUs 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. The approach also builds on the lessons learned from the Finance and Markets GP, which has pioneered this approach over the past few years.

Although this 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 the 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.

Country-Owned Program

The programmatic approach will aim to support countries that consider forests to be 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 for forests, as well as their contribution to the national economy and global public goods. The approach 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.

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, Reimbursable Advisory Services, investments, policy loans, and results-based finance), to define the mix that best serves their needs. Although the use of Economic and Sector Work and investments has traditionally been at the heart of WBG interventions in the forest 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 operations accounted for a significant share of the total forest sector commitments that were financed between FY08 and FY10. However, they no longer feature prominently in the World Bank's forest portfolio. As governance and policy reforms still represent major challenges for the sustainable management of forests (see chapter 2), the Environment and Natural Resources GP will engage with Operations Policy and Country Services to identify constraints to World Bank support for forest-related Development Policy Lending. As of today, the forest portfolio[2] has not included any Program for Results operation. However, it is expected 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).

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 blends and sequences 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 upfront investment cost that is 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, for example, lower maintenance and operation costs. Strategic partnerships with other stakeholders, such as bilateral 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's 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 WBG's commitment to scaling up climate finance.[3]

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 be transformative, country programs usually need to be implemented over a time horizon that is much longer than the typical project lifetime of three to five years, with support over a period of 10 to 15 years, through complementary interlinked interventions. This 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 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).

Strengthen Monitoring Systems

Monitoring the performance of the WBG forest 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

BOX 3.1 Making the Programmatic Approach a Reality: Mexico's Forest and Climate Change Program

The World Bank has supported the forest sector in Mexico for the past two decades. The support evolved in scope and amount, to respond to specific needs. It started with institutional support to the newly created National Forestry Commission of Mexico (CONAFOR) in the late 1990s, and shifted to piloting programs in the 2000s, such as the Program on Payment for Environmental Services or the Program on Community Forests, which have since become emblematic programs not only in Mexico but worldwide. The forest program in Mexico is today the largest World Bank 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 manage their forests sustainably, 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 World 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. Through a package of various instruments and financing modalities, the World Bank Group (WBG) has been able to provide the Government of Mexico with a comprehensive offer, building on large investments (the heart of the program), good practices, innovation, and partnerships. The World Bank, with its convening power, fosters dialogue across institutions and stakeholders.

WBG instruments:	IBRD Sector Investment Loan Forest Carbon Partnership Facility (FCPF) Readiness Fund (grant) Forest Investment Program (FIP) grant and loan FCPF Carbon Fund performance-based payments Analytical work (Program on Forests, Ford Foundation)
Financing:	**TOTAL $460 million** Readiness: $9 million (grant) Investments: $392 million (IBRD $350 million loan; FIP $16.44 million loan; $25.66 million grant) Results-based finance: $60 million (estimated)
Other Partners:	Inter-American Development Bank, French Development Agency, Ford Foundation, and United States Agency for International Development

at three levels: first, improving the capacity of the WBG to monitor progress toward achieving results and evaluate the 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.

Results and Impacts of Operations

The review of the FY12–15 forest portfolio revealed significant weaknesses in reporting the 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. The Committee on Development Effectiveness (CODE) made enhancement of the quality of 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 (PPIs), and (iii) use of impact evaluations.

Systematic Use of the Core Indicators

Several core sector indicators and related guidance notes for World Bank operations, including forest investments and other investments, were launched in July 2012 and updated in 2014.[4] The systematic use of core sector indicators in projects and programs on forests will allow the aggregation of results at the portfolio level, and 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 forest and forest-relevant operations to overcome past inconsistencies. This will enable the aggregation of the results at the portfolio level in the future.

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

Inclusion of Predictive Proxy Indicators

Most project indicators (even core sector indicators) that are 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 World Bank management to develop a set of PPIs[5] that could be included in the project results framework and 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 forest 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). The identified PPIs have been included in recently-approved operations on forests.[6]

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 understand the links 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 forest 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 the attribution of impacts to specific interventions (as opposed to other potential factors) especially difficult within the forest sector.

Building on an in-depth review of the World Bank's portfolio of forest operations from FY02–15 and statistical analysis, the Program on Forests produced a report that concludes that predictive proxy indicators (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. The indicators are presented in an indicator menu organized by major objective (poverty, biodiversity, climate, or governance), which includes brief notes on how the indicators might be used. However, the report highlights that there are no standalone "silver bullet" predictive proxies. 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 that are already used by the World Bank have strong potential as PPIs, meaning that the core sector indicators can help to capture not only the end-of-project outcomes, but also the longer-term impacts of forest investments, and in a consistent way across countries and contexts.

Source: Miller and Benson-Wahlén 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 forest operations will coordinate more systematically with World Bank evaluation teams (for example, the Development Impact Evaluation [DIME] research group) to include an impact evaluation from the onset of the preparation process.[7] 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.

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. 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, the WBG will continue to support the strengthening of clients' capacity to generate and monitor forest-related information in a robust and reliable manner. Under the FCPF Readiness operations, the WBG provides support to almost 40 countries in the construction of their monitoring, reporting, and verification systems. As more and more ICT options emerge and data are made publicly available, the World Bank will provide technical guidance to clients on how to build up their forest monitoring systems to respond to future needs, particularly in the context of REDD+ under the UNFCCC.

Global Monitoring Tools

Forest-Related World Development Indicators

The World Bank's adjusted net savings indicator, published annually in the WDI, builds a comprehensive set of capital assets that constitute a nation's wealth base, including natural resources such as forests. In addition to forest rents, the WDI annually publishes an indicator on net forest depletion, which 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.[8]

Key Actions: In addition to working on improving the estimates of these two current forest-related indicators, the Environmental Economics team

in the Environment and Natural Resources GP 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. The 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.

Forest Module in the Living Standards Measurement Study

A forest module has been developed under the Living Standards Measurement Study (LSMS), which was established by the Development Research Group to explore ways to improve the type and quality of household data collected by statistical offices in developing countries.[9] The specific module on forests was piloted in Indonesia and Tanzania during the second half of FY15. A Sourcebook on the Design and Implementation of Forest Modules in LSMS-Integrated Surveys on Agriculture 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. World Bank forest interventions will include, where appropriate, a capacity-building activity on the use of the module for forest departments, statistical offices, or other appropriate institutions.

Strengthen the Knowledge and Evidence Base

Knowledge that Responds to 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 FAP (described in chapter 2). When prioritizing knowledge products, the World Bank 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 engagement at the country level. Over the next five years, however, there will 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*. This analytical work will deepen the understanding of the forest-poverty nexus and the contribution of forests as potential pathways out of poverty. It will be supported by PROFOR and build on a series of cases in various countries.

- *Commercial reforestation*. This work will 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*. This work will identify opportunities to unlock the potential of forest value chains to generate jobs and economic opportunities (including for SMFEs).
- *Land use change dynamics*. This work will provide better understanding of the interlinkages between forest cover and other land uses, with a particular focus on the trends in the production of major agricultural commodities (palm oil, soybean, beef, coffee, and so on) and large infrastructure development.
- *Forest-smart development in the agriculture, transport, energy, and extractive sectors*. This work focuses on the inter-linkages between forests and other sectors. Analytical work already underway includes: low-deforestation value chains (in collaboration with Agriculture GP); meeting future energy needs through wood energy, and minimizing mining operations' impact on forests (with Energy and Extractives GP); and risk management for coastal zones, fire management, flood and landslides (with SURR GP). Discussions are on-going to develop additional programs, including on forests and transport (with Transport GP) and forests and rights (with SUUR GP).
- *Contribution to climate change mitigation and adaptation*. This work will assess the potential of the full forest product cycle for 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.

Learning from Operations

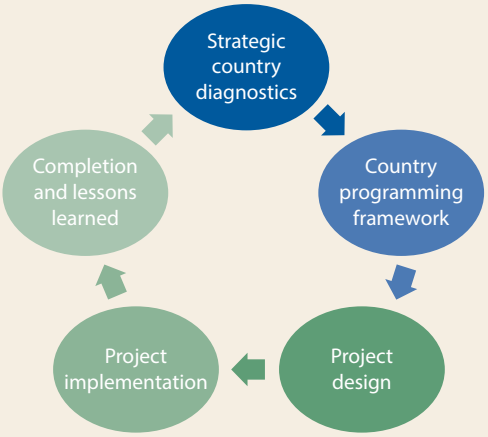
The systematic generation and use of knowledge is an integral part of World Bank interventions and a core element of the different stages of its country engagement—from early policy dialogue to completion of the interventions (see box 3.3). Generating lessons and using knowledge is imperative to making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

The Country Forest Notes will present an upstream analysis of threats to forests, as well as opportunities for socioeconomic growth in the forest sector. The notes will directly feed into the SCDs, 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, 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.

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.

Streamline Institutional Arrangements and Procedures

To ensure the 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 Forest Team"
- Streamlining operational processing of programmatic engagements
- Streamlining relevant global funds hosted by the World Bank, including procedural and governing arrangements.

Although 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).

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 agenda for integrated forest and other land uses, 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 from various GPs, CMUs, and CCSAs. At the corporate level, the role of the World 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 the Environment and Natural Resources GP and CC-CCSA join forces to deliver on forest programs. Such cross-GP-CCSA collaboration is at the heart of the new World Bank structure. The WBG will also offer support through the IFC and MIGA to investors that are willing to do business based on high social and environmental standards.

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. It will move toward a more programmatic approach that would strategically position the WBG to support countries delivering on forest-smart interventions. Building on the lessons learned from the Finance and Markets GP, which 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,[10] 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 that allows for optimal use of technical and financial resources. Although 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 clients; the packages would also provide for optimizing the number of decision points (at the concept and decision stages).

WBG-Hosted Forest-Related Climate Trust Funds

At the COP21 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 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 World 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 the performance of results-based instruments while addressing short-term investment funding needs.

Partnerships

Since the adoption of the Forest Strategy in 2002, the World Bank has fostered several important partnerships[11] and worked closely with the United Nations 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 forums, including the United Nations Forum on Forests, UNFCCC, REDD+, and United Nations Permanent Forum on Indigenous Issues. The WBG will continue to be an active partner in global partnerships that advance the dialogue on the sustainable management of forests.

In addition, the World Bank hosts influential trust funds on forests, such as the BioCF, FCPF, FIP, and GEF, which 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 FIP and its associated Dedicated Grant Mechanism for Indigenous Peoples and Local Communities have deepened the World 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-sector knowledge activities undertaken by 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. 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 Europe and Central Asia 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, which is hosted by the African Union and helps countries to restore degraded land. The World Bank is also a member of the Latin America and the Caribbean 20x20 initiative, which 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, which is a collaborative effort of five intergovernmental 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.

Notes

1. As indicated in chapter 2, the sequencing for the preparation of these Country Forest Notes will be based on (i) the importance of forests in the country, (ii) the timeline of preparation of SCDs/CPFs, (iii) the pipeline of WBG projects and programs, and (iv) the availability of funding. In some cases, the notes will be prepared at the subnational level.
2. This refers to all operations that have been registered in the World Bank system with the forest code ("forest-tagged" operations).
3. In October 2015, the World Bank committed to increasing from 21 to 28 percent its financing that goes to climate actions.
4. See http://intresources.worldbank.org/INTOPCS/Resources/380831-1177599583121/3719948-1248469457617/6332446-1412776252855/CoreSectorIndicatorsList.pdf.
5. PPIs are often used in other fields. For example, education level is widely used as a predictor for future earnings, but the use of PPIs is a new development for the forest sector.
6. The most recent example is the Argentina Forests and Community Project.
7. 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 one on the Mexico Forest and Climate Change project.
8. See http://data.worldbank.org/indicator/NY.ADJ.DFOR.GN.ZS.
9. The Living Standards Measurement Study (LSMS) is a household survey program that was developed by the World Bank. The LSMS focuses 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.

10. A Programmatic Concept Note for Colombia and a Programmatic Appraisal Document for Ethiopia.
11. These include the World Bank–World Wildlife Fund Alliance, Forests Dialogue, Growing Forest Partnerships, Global Partnership on Forests Landscape Restoration, and the Collaborative Partnership on Forests in support of the United Nations Forum on Forests. The World Bank has also supported specific financing modalities for partnerships through the BioCF, FCPF, Critical Ecosystems Partnership Fund, and, to a lesser extent, the Program on Forests.

Appendix A: Learning from the World Bank Group's Forest Portfolio

Summary

Between FY02 and FY15, the World Bank Group (WBG) invested a total of $6.5 billion in the forest sector, which corresponds to an average of $465 million per year. Based on the latest Organisation 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. However, the World Bank's share remains small compared with private financial flows (about $15 billion per year).

Overall, the WBG's forest portfolio has performed reasonably well against World 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. However, there is 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's forest portfolio has evolved significantly in the use of instruments. Development Policy Loans, which were frequently used between FY09 and FY12 in the forest portfolio, have been very limited in more recent years. This change 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.

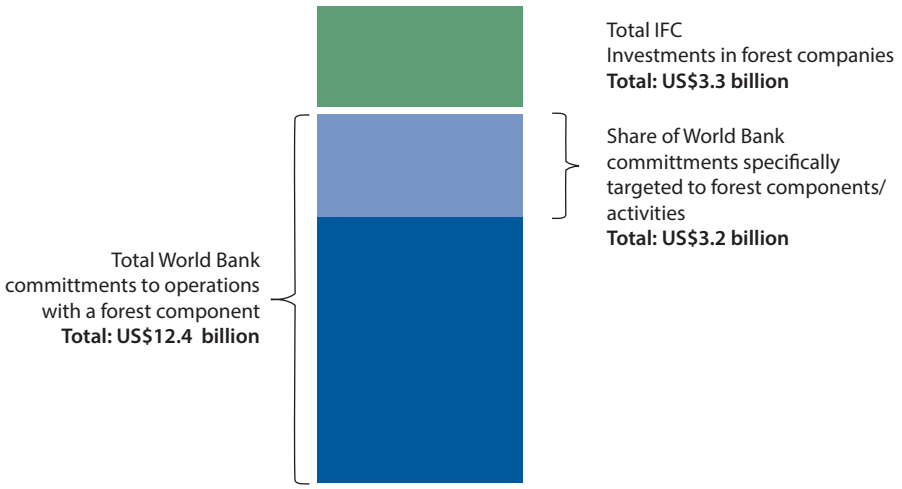
In financing sources, global programs on climate change (supported through trust funds) that are largely geared toward performance-based operations now dominate the forest portfolio (and pipeline). Although this situation this represents a major opportunity to align the forest and climate agendas in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

Building on the portfolio review as well as the outcomes of the 2013 Independent Evaluation Group's evaluation of the implementation of the Forest Strategy, this appendix provides an overview of the WBG's 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, as further detailed in chapters 2 and 3.

Over the past 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.[1] Based on the latest Organisation 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.[2] However, the World Bank's share remains small compared with private financial flows.

Between FY02 and FY15, World Bank operations—International Development Association (IDA), International Bank for Reconstruction and Development (IBRD), and trust funds—that invested in forests or included a component (or an activity) on forests[3] represented a total amount of $12.4 billion, of which about a fourth was specifically dedicated to forest components and activities. For the same period, International Finance Corporation (IFC) investments in forest product companies totaled approximately $3.3 billion (see figure A.1). The Multilateral Investment Guarantee Agency's (MIGA's) involvement in the sector has been modest, supporting only a few forest-related projects.

FIGURE A.1 Total World Bank Group Commitment to the Forestry Sector, FY02–15



Review of the World Bank's Portfolio, FY02–15

Over the FY02–15 period, the World Bank[4] supported 309 operations with a forest component/activity (forest-coded operations).[5] 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).

Portfolio Performance

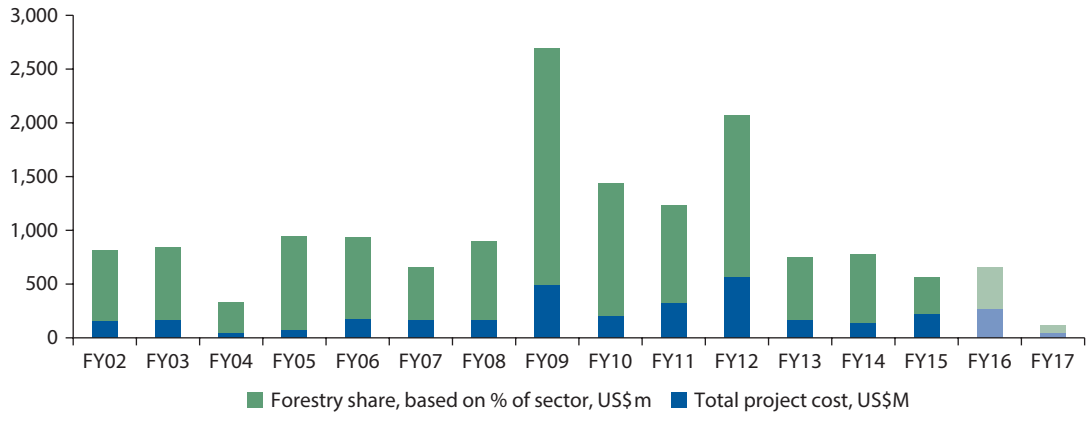
Overall Results and Impacts

Since the adoption of the World Bank Group (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.[6]

The review of the evaluative material from these operations highlights some of the benefits from World 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.

FIGURE A.2 Total Annual Finance Volume Committed to Forest-Tagged Operations, FY02–15



- *Strengthening sustainable forest management and advancing the rule of law by increasing transparency and accountability and 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 World 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 the 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 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 forest and forest-related sector operations.

Performance Indicators

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

The World 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.

TABLE A.1 IEG Ratings of the Performance of the World Bank Forest Portfolio, FY02–15
(% moderately satisfactory or better)

Performance indicator	Forests	Agriculture GP	ENR GP
Outcome	**64**	**62**	**62**
World Bank overall performance	**60**	**65**	**55**
Borrower overall performance	**70**	**62**	**69**
ICR quality	**90**	**87**	**90**
M&E quality	**24**	**27**	**26**

Source: World Bank Business Intelligence, Data System (July 2015).
Note: ENR = Environment and Natural Resources; ICR = Implementation and Completion Review; IEG = Independent Evaluation Group; GP = Global Practice; M&E = monitoring and evaluation.

Complexity and Perception of Risks

The often perceived risk, within and outside the World Bank, may be anchored in anecdotal references to Inspection Panel cases related to the forest portfolio. However, records from the WBG's Inspection Panel 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 five focused on forest projects and eight claimed adverse impacts of World 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, although some Inspection Panel cases on forest operations gained attention, the number of World Bank-funded projects on forests brought to the Inspection Panel does not provide definitive evidence of the risk of the overall portfolio and sector.

TABLE A.2 Number of Inspection Panel Cases Related to Forests

Projects/claim received by the WBG's Inspection Panel	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 World Bank's Policy on Indigenous Peoples OP 4.10.

Major Features of the World Bank's Forest Portfolio

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

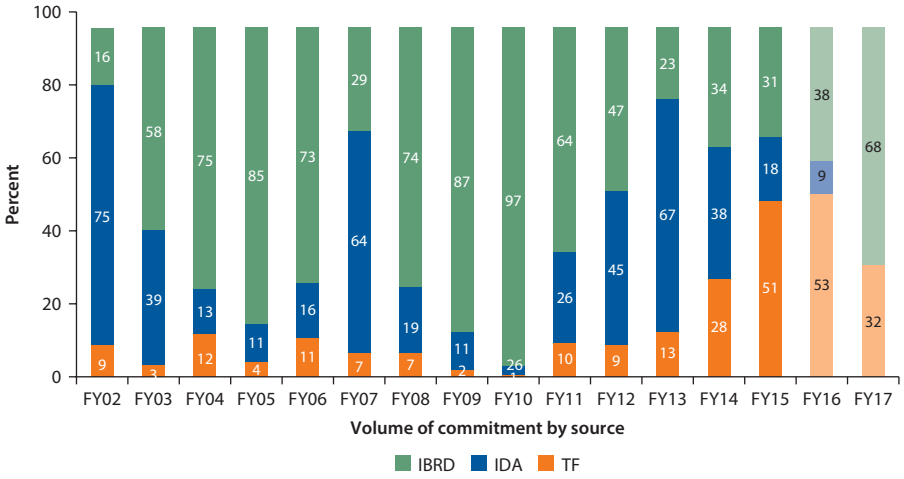
A multisector portfolio by nature. Although most of the forest-coded operations are implemented through the Environment and Natural Resources Global Practice, other Global Practices—such as Agriculture; Water; Energy and Extractives; and Social, Urban, Rural, and Resilience—have traditionally included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

Importance of trust funds. Although the IBRD/IDA has traditionally been by far the largest source of financing in volume (see figure A.3), trust

TABLE A.3 Number of Forest-Coded Operations, FY02–15, by Global Practice

Global Practice	Number of forest-coded operations
Environment and Natural Resources	257
Agriculture	38
Macro Economics and Fiscal Management	14
Social, Urban, Rural, and Resilience	14
Water	10
Energy and Extractives	4
Transport and ICT	3
Poverty	2
Social Protection and Labor	1

FIGURE A.3 Volume of Commitments, by Sources of Financing for Forest-Related Operations, FY02–15



Note: IBRD = International Bank for Reconstruction and Development; IDA = International Development Association; TF = trust fund.

fund 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 trust fund operations for $1.1 billion.[7] The large number of small trust fund operations (40 percent of which were less than $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 fund operations has substantially increased in financial volume (surpassing 50 percent in FY15), and with much larger operations. The main sources for these operations are the forest-related climate trust funds administered by the World Bank.

The World Bank is hosting a variety of multi-donor 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. Contributor countries have requested the World Bank to manage and implement their funds to address the forest challenge, taking advantage of the World Bank's fund management and technical expertise, country experience, global knowledge, and deep multisector engagement. Commitments to these instruments have surpassed $2 billion (see table A.4).

Even at the 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.

A transition to climate finance transactions. The use of sector investments (and Development Policy Loans) has traditionally driven World Bank interventions in the forest and related sectors. More than 38 percent of the total commitment to the Global Programs on Forests and Climate is

TABLE A.4 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 greenhouse gas 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

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 Africa, Latin America, and Southeast Asia through performance-based payments (see table A.5). Given their very nature (payments for results), discussions are ongoing between the World Bank Environment and Natural Resources Global Practice, Climate Change Cross-Cutting Solutions Area,

TABLE A.5 Emerging Business: Results-Based Payments

Letters of intent and maximum value of results-based payments		
Country	**LOI Signature Date**	**Max value at $5/tCO$_2$e[a] (million dollars)[b]**
FCPF		
1. Chile	8/22/14	26
2. Costa Rica	9/10/13	60
3. Côte 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**

Note: BioCF = BioCarbon Fund; FCPF = Forest Carbon Partnership Facility; ISFL = Initiative for Sustainable Forest Landscapes; LOI = letter of intent; tCO_2e = tons of carbon dioxide equivalent.

* LOI not yet signed (projected date for signature).

** FCPF Carbon Fund Resolution on October 16, 2015.

*** Amount to be confirmed.

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

b. The final commitment of funds available in the FCPF Carbon Fund to individual programs will be made prior to subsequent signature of Emission Reduction Payment Agreements.

Environmental and International Law, and Operations Policy and Country Services to identify how the lessons learned from the Program for Results can inform the way the performance-based programs under the climate funds are processed.

Review of the IFC portfolio

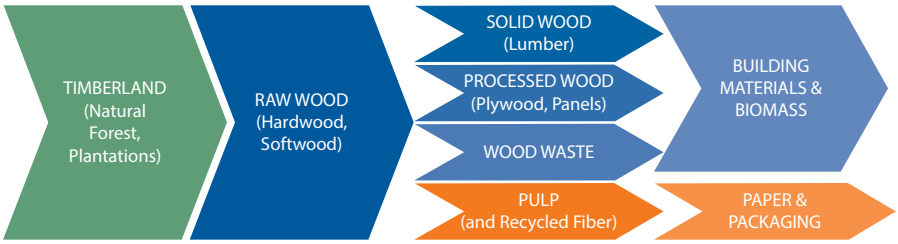
Investments All Along the Value Chain

The IFC has vast experience in the forest sector, and its portfolio spans a diverse group of subsectors throughout the wood fiber value chain (see figure A.4). The IFC supports forest investments (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, the 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.

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 the best available technologies and 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 the approximately 31 IFC forest sector projects that regularly

FIGURE A.4 Wood Fiber Value Chain



report on jobs, approximately 85,000 direct jobs have been created. The IFC's forest portfolio has sequestered four million tons of carbon dioxide equivalent per year.

IFC's Investments over the Past 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 forest sector projects, with a total cost of about $10 billion.[8] 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.5). The share of forest 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, the IFC invested in 29 countries. East Asia and the Pacific attracted the most financing, and financing was limited in Africa and the Middle East.[9] The relatively high proportion of IFC investments channeled to the East Asia and Pacific region reflects the importance of the forest

FIGURE A.5 IFC Portfolio, by Subsector

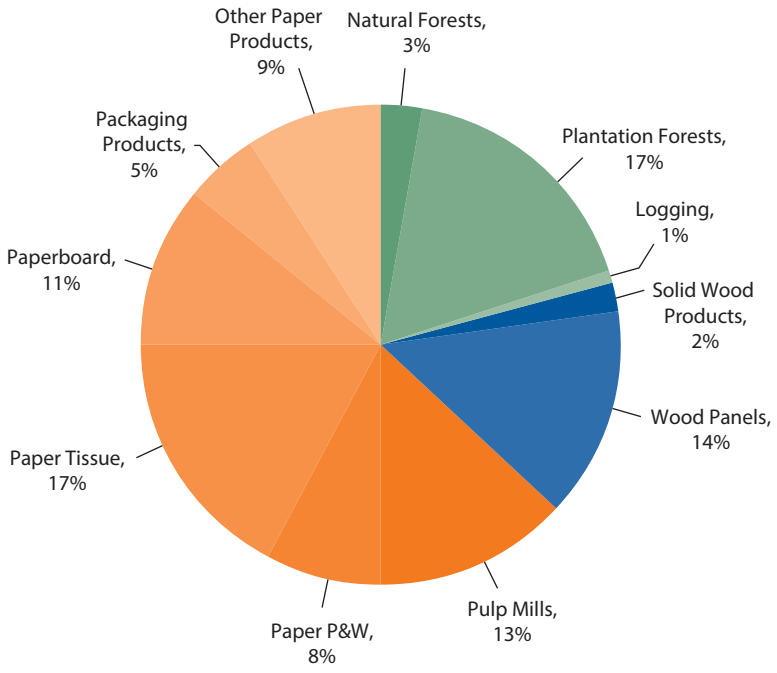
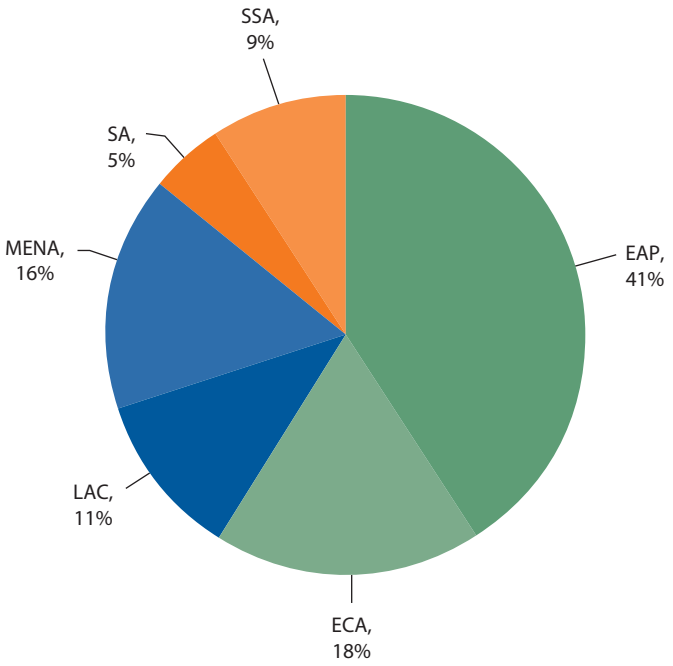


FIGURE A.6 IFC Portfolio, by Region



Note: MENA = Middle East North Africa; SA = South Asia; SSA = Sub-Saharan Africa; EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America

industries there and the emerging investment opportunities. In East Asia and the Pacific and Latin America and the Caribbean, the IFC's main investments have targeted the rapidly expanding pulp and paper industries in Brazil, China, and India.

The current IFC portfolio in the forest products sector stands at $675 million, with 52 active investments involving 41 clients. Overall, the portfolio shows good regional and subsector diversification, with a natural higher weight of East Asia (in line with the sector activity in the past 10 years) (see figure A.6). Twenty-four percent of the portfolio is invested in IDA countries.

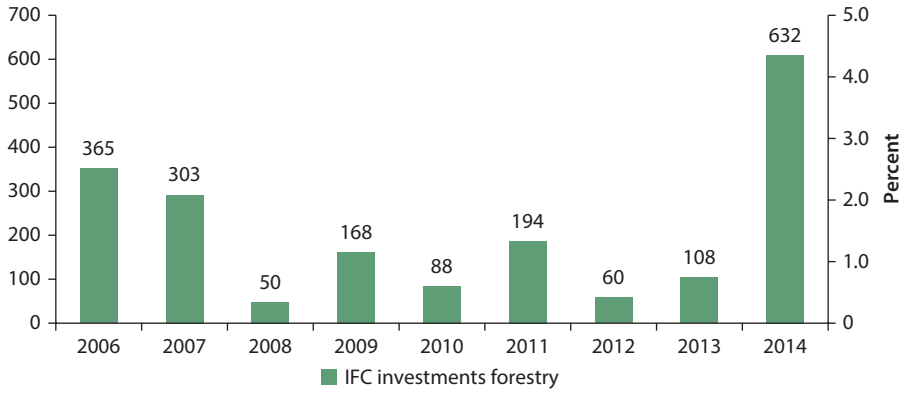
The pulp and paper subsector represents 63 percent of the total sector portfolio; the remaining 37 percent corresponds to the forest and wood products subsectors.

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

Opportunities for the 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 past 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 high-income countries. Investments required for

FIGURE A.7 IFC Portfolio in the Forestry Sector



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.

The IFC has the potential to play a significant role in the industry, as opportunities emerge in developing countries, 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 forest sector in developing countries. So far, however, the IFC has not responded to the booming opportunities (see figure A.7). Investments in the sector remain limited in 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 the IFC's Standards, including those on Environmental and Social Performance.

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 ensure its operational feasibility. Although 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 forest sector in its active portfolio, one of which is around $50 million and the other two below $10 million.

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 Forest Strategy, are critical for defining the priorities for the Forest Action Plan FY16–20. The lessons highlight shortcomings or lost opportunities in the delivery model, and encompass areas that need improvements or a new focus, along with those where scaled-up actions are appropriate. Table A.6 identifies the key areas that will be addressed in the Forest Action Plan.

TABLE A.6 Key Areas to Be Addressed by the Forest Action Plan

Improvements in the Delivery Model

- Enhance the role of forests in the WBG portfolio.
- Increase the commitments from IDA/IBRD resources to the forest sector and strategically combine them 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 the portfolio level.
- Foster multidisciplinary World Bank task teams.

Areas That Need Scaling Up

Forest 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

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 the integrated watershed/basin management
- Promotion of integrated landscape approach
- Enhancement of landscape resilience
- Mainstreaming of the forest dimension in investments in agriculture, extractives, energy, transport, and hydroelectric power

Cross-Cutting: Improve governance, policy frameworks, and institutions to reduce risk to the forest sector.

Note: IBRD = International Bank for Reconstruction and Development; IDA = International Development Association; IFC = International Finance Corporation; MIGA = Multilateral Investment Guarantee Agency; WBG = World Bank Group.

Notes

1. OECD website, accessed on July 2015.
2. It is difficult to establish the exact share of the WBG's engagement because of 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.
3. 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.
4. The World Bank means the IBRD part of the WBG, which implements IDA, IBRD, and trust fund operations.
5. 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. One of the sectors is forests.
6. The other 221 operations with a forest component, accounting for about $2 million in dedicated to forest activities, are currently under implementation.
7. The cumulative amounts refer to the full amount of the forest-coded operations (not the forest share).
8. Over the period FY02–15, the IFC invested $3.3 billion.
9. The regions used by the IFC differ slightly from the regions used by the World Bank. Therefore, a regional portfolio aggregation by region for the WBG is not possible.

Appendix B: Monitoring the Forest Action Plan

Monitoring of the Forest Action Plan will align with the World Bank Group's (WBG's) overall Scorecard, and will accordingly report on three tiers:[1] long-term development outcomes that countries are achieving, results reported by WBG clients implementing WBG-financed operations, and operational and organizational effectiveness (see table B.1). The systematic use of core sector 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 B.1 Overall Framework for Monitoring the Forest Action Plan

Tier I *Long-term development outcomes*		**WBG development outcomes** (10–15 years)	End extreme poverty and boost shared prosperity in a sustainable manner.		
		Forest Action Plan	Tap the potential of forests and trees to contribute to the WBG's goals of ending extreme poverty and boosting shared prosperity in a sustainable manner.		
Tier II *Results reported by WBG clients implementing WBG-financed operations*		**Programs/ projects**	Focus Area 1: Sustainable Forestry	Focus Area 2: Forest-Smart Interventions in Other Sectors	Cross-Cutting Themes: Climate Change and Resilience, Rights and Participation, and Governance and Institutions
Tier III *Operational and organizational effectiveness*		**WBG delivery model**	Programmatic approach that combines various instruments (technical assistance, investment, and performance-based payments) supported by a mix of financing sources (IBRD/IDA, trust funds, IFC) wherever possible. For other countries, the project approach will be maintained.		

Note: IBRD = International Bank for Reconstruction and Development; IDA = International Development Association; IFC = International Finance Corporation; WBG = World Bank Group.

Tier I. Long-Term Development Outcomes That Countries Are Achieving

Implementation of the actions proposed in the Forest Action Plan FY16–20 will contribute to ending extreme poverty and boosting shared prosperity in a sustainable manner.

Relevant Tier I World Bank Scorecard Indicators:

- Population living on less than $1.25 (purchasing power parity) a day (percent)
- Median of growth rates of average real per capita income of the bottom 40 percent (percent)
- Average annual deforestation change (percent)
- Emission reductions with support of special climate instruments (million tons of carbon dioxide equivalent).

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.

Table B.2 provides guidance for the use of the relevant core sector indicators that should be included in all forest-related operations, as well as indicators which correspond to specific focus areas and cross-cutting themes of the Forest Action Plan:

TABLE B.2 Proposed Results Framework for Forest-Related Operations

Core Sector Indicators	Unit
All programs/projects will monitor the following indicators	
Beneficiaries	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
Focus Area 1: Sustainable Forestry	
Forest area brought under management plans	ha
Area restored or re/afforested	ha
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 World Bank funding: lines of credit – microfinance	$
Volume of World Bank funding: lines of credit – SMEs	$
Focus Area 2: Forest-Smart Interventions in Other Sectors	
Avoided deforestation	ha
Area restored or re/afforested	ha
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

TABLE B.2 Proposed Results Framework for Forest-Related Operations *(continued)*

Core Sector Indicators	Unit
Cross-Cutting Themes	
Participation and Rights	
Representatives in community based decision making and management structures that are from the vulnerable or marginalized beneficiary population	Number
Participants in consultation activities during project implementation	Number
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 and 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
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	tCO_2e

Source: World Bank 2012; List of Core Sector Indicators, Results Platform, OPCS.

Note: OPCS = Operations Policy and Country Services; SMEs = small and medium enterprises; tCO_2e = tons of carbon dioxide equivalent.

Tier III. Operational and Organizational Effectiveness

TABLE B.3 Monitoring the Operational and Organizational Effectiveness of the Forest Action Plan Implementation

Operational and Organizational Indicators	Unit
Development outcome ratings of forest related operations	
Satisfactory operation outcomes at completion	% IEG rating
IBRD countries	% IEG rating
IDA countries	% IEG rating
Operational effectiveness of forest related operations	
Number of programmatic approaches on forest landscapes	Number
Number of Country Forest Notes	Number
Active IDA/IBRD/trust fund 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

Note: IBRD = International Bank for Reconstruction and Development; IDA = International Development Association; IEG = Independent Evaluation Group; IFC = International Finance Corporation.

Note

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

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