



**WORLD BANK GROUP**  
Environment, Natural Resources & Blue Economy

# Benin

## Country Forest Note





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## List of acronyms

APN	African Parks Network
BTC	Belgian Technical Cooperation
CBD	Convention on Biological Diversity
CBO	Community-based Organization
CCUA	Coordinating Council of Management Units (Conseil de Coordination des Unités d'Aménagement)
CDM	Clean Development Mechanism
CED	Classified Estate Domain
CENAGREF	National Center for the Management of Wildlife Reserves (Centre National de Gestion des Réserves de Faune)
CENATEL	National Center for Remote Sensing and Ecological Monitoring (Centre National de Télédétection et de Suivi Ecologique)
CERF	Center for Studies, Research, and Forest Training (Centre d'Etudes, de Recherches et de Formation Forestières)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CFN	Country Forest Note
CGPF	Participatory Forest Management Council (Conseil de Gestion Participative de la Forêt)
CGUA	Managing Council of Planning Units (Conseil de Gestion des Unités d'Aménagement)
CLFS	Local Forest Management Committees for Sacred Forests (Comité Local de Gestion de Forêt Sacrée)
CoForMo	Communauté Forestière du Moyen Ouémé
CPF	Country Partnership Framework
CSO	Civil Society Organization
CTAF	Technical Forestry Management Unit (Cellule Technique d'Aménagement Forestier)
CVGF	Village Forest Management Council (Conseil Villageois de Gestion de la Forêt)
DGEFC	Directorate General of Water, Forests, and Hunting (Direction Générale des Eaux et Forêts et Chasse)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAP	Forest Action Plan
FNDF	National Forestry Development Fund (Fonds National de Développement Forestier)
FSOA	West African Savannahs Foundation (Fondation des Savanes Ouest Africaines)
GDP	Gross Domestic Product
GEF	Global Environment Facility
GF	Gazetted Forest
GHG	Greenhouse Gas
GIZ	German Agency for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit)

IDA	International Development Association
ITMO	Internationally Transferred Mitigation Outcome
IUCN	International Union for Conservation of Nature
JI	Joint Implementation
JICA	Japan International Cooperation Agency
KfW	Kreditanstalt für Wiederaufbau
LULUCF	Land Use, Land Use Change and Forestry
MCVDD	Ministry of Living Environment and Sustainable Development (Ministère du Cadre de vie et du Développement Durable)
MRB	Rural Wood Market (Marché Rural de Bois)
MRV	Monitoring, Reporting, and Verification
NAPA	National Adaptation Programme of Action
NDC	Nationally Determined Contribution
NGO	Nongovernmental Organization
NTFP	Non-Timber Forest Product
ONAB	National Office for Wood (Office National du Bois)
OVGF	Village Forest Management Organization (Organisation Villageoise de Gestion de la Forêt)
PAG	Government's Action Plan (Programme d'Actions du Gouvernement)
PED	Protected Estate Domain
PFR	Rural Land Use Plan (Plan Foncier Rural)
PNP	Pendjari National Park
PNW	W National Park
PPP	Public-Private Partnership
PRIME	Productivity, Rights, Investments, Markets, Ecosystems
PROFOR	Program on Forests
REDD+	Reducing Emissions from Deforestation and Degradation
SMEs	Small and Medium Enterprises
SCD	Systematic Country Diagnostic
TIN	Taxpayer Identification Number
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WAEMU	West African Economic and Monetary Union
WAP	W-Arly-Pendjari

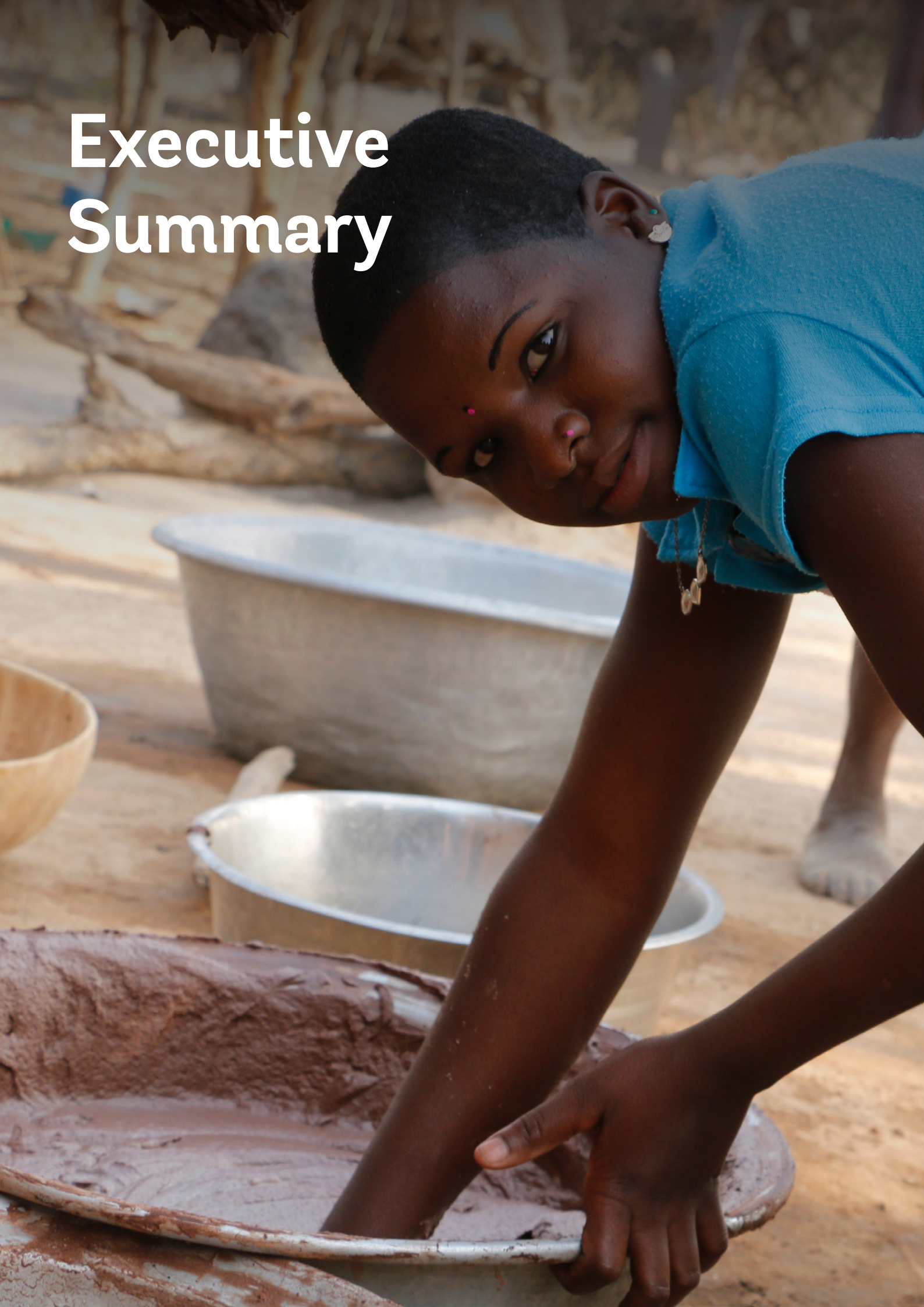
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# Executive Summary





## EXECUTIVE SUMMARY

**Country Forest Notes (CFNs) are a centerpiece of the World Bank Group's Forest Action Plan (FY16–20) and Climate Change Action Plan (2016–2020).** They provide a thorough assessment of the current status of forests, the forestry sector, and the investment needs to sustainably manage this valuable renewable natural resource. As stated in the World Bank Group's Forest Action Plan *the World Bank aims to support client countries' efforts to implement priority actions linked to forests and their development priorities, by focusing more deliberately on the positive contributions that forests make to the poverty reduction, food security, economic development, building resilience towards climate change and climate change mitigation.*

**The Benin CFN was developed through a participatory process involving national government actors for forestry development.** Interviews and validation of the report took place in Benin with the participation of key actors and institutions for forest development. The objectives of a CFN are to identify the key challenges and opportunities that exist for sustainable forestry and forest-smart interventions and the ways to address them. Consistent with the Forest Action Plan, the Benin CFN was developed using the Productivity, Rights, Investments, Markets, Ecosystem (PRIME) framework, which is used as a tool to further assess the nexus between forests and economic development and the role of forests as pathways out of poverty.

### Characteristics of the forest sector in Benin

*Benin's forests are mainly represented as savannah-mosaic ecosystem.* Forests are present in a climatic zone where the mean rainfall is less than 1,200 mm per year in the so-called West African forest belt Dahomey Gap. Forests host key habitat for biodiversity and provide ecosystem services, source of energy, food and cultural needs for the population. Forests and mangroves are key regulators of the global environment through carbon storage, which contributes toward climate change mitigation and adaptation.

*Forests host a rich biodiversity in Benin.* National parks cover 1.26 million ha equal to about 11 percent of the national territory. The Pendjari National Park (PNP) and the W National Park (PNW) cover 40 percent of a contiguous transboundary protected areas network called W-Arly-Pendjari (WAP, 3.39 million ha) shared with Burkina Faso (36 percent) and Niger (24 percent). Since 2010 the national parks have been receiving around 6,500 of tourists yearly, of which 98 percent visit the Pendjari Park.

*Forest governance presents a multilayered institutional arrangement for managing forests in Benin.* Under the Ministry of Living Environment and Sustainable Development (MCVDD: *Ministère du Cadre de vie et du Développement Durable*), the Directorate General of Water, Forests, and Hunting (DGEFC: *Direction Générale des Eaux et Forêts et Chasse*) is the leading structure of the Forest Administration, responsible for defining and implementing forest policies and regulations. It manages the major portion of Classified Estate Domain (CED), which represents a national heritage belonging to the central state (46 gazetted forests (GFs) and seven reforestation perimeters). The DGEFC also called the Forestry Administration oversees the Protected Estate Domain (PED), which is present in the rural domain and managed by the municipalities, covering 80 percent of the natural forests. Seven GFs are also under the management of the National Office for Wood (ONAB: *Office National du Bois*), which has the mandate on forest plantations and produces mainly timber for export. The National Center for the Management of Wildlife Reserves (CENAGREF: *Centre National de Gestion des Réserves de Faune*) is responsible for the management of the two national parks (Pendjari and W). Recent changes include the entrustment of the PNP to African Parks Networks.

*Deforestation is high and accelerating mostly in the north.* National statistics present a loss from 7.6 to 5.9 million hectares (has) of forests, showing a 14 percent decrease and a deforestation rate of 1.4 percent per year between 2005 and 2015.

The forestry sector's contribution to the gross domestic product (GDP) remains undervalued and not properly assessed. Wood production is currently not meeting the needs for economic growth in the forestry sector. In 2009, the contribution of the forestry sector to the GDP was estimated at 6 percent or CFAF 143 billion (US\$242 million). The Government of Benin aims at increasing the volume of timber annually to 250,000 m<sup>3</sup> through large-scale plantations to generate forest-related jobs and increase public revenues.

Benin exports a significant volume of timber, most of it coming from plantations in recent years. Timber plantations are established in 20,000 ha under delegated management of ONAB reaching a yearly production between 45,000 and 60,000 m<sup>3</sup>. National timber demand lies between 120,000 and 160,000 m<sup>3</sup> per year. Statistics on the production of timber plantations run by municipalities and by private individuals in the PED are almost nonexistent.

Benin was the pioneering country in West Africa in the co-management participatory process. Through this process, communities benefit from the collection of taxes from legally exploited forest products. The law mandates that communities receive between 10 and 40 percent of the logging taxes according to the type of exploitation by the forest operators. The share is oriented toward community development infrastructure such as road building, bridges, and schools.

The contribution of the forest sector to poverty reduction is poorly quantified but visible through the provision of non-timber forest products (NTFPs). Forests are a key element in the short-term well-being of rural populations through supporting the provision of NTFPs. The potential for development of NTFPs is high as the demand is rapidly growing but their value chains are poorly organized. A national strategy for the valorization of NTFPs targeted 10 priority products, of which 5 are of major economic interest: Shea butter, African locust bean, Baobab, Tamarind and Bitter kola. The level of natural potential in relation to demand, however, differs sharply between the different products: while there is a strong pressure endangering Shea, African locust bean, Baobab, and Tamarind species, other products of high value, such as honey or wild mushrooms, are still not exploited to their full potential.

### Drivers of deforestation in Benin

The main drivers of deforestation are associated with land use change due to extensive agriculture, illegal logging activities for timber collection, and fuelwood and charcoal production to meet the needs of energy demand, urban expansion, and illegal hunting. Indirect drivers of deforestation and degradation are related to the rapid demographic growth and persistent poverty; the competing models of development of the sectors of production (agriculture, livestock, and forestry); weak forest governance and law enforcement; land and forest rights; lack of incentives for the support of sustainable forestry and agriculture activities; and the aggravating threats of climate change.

Agriculture is the largest contributor to GDP (25 percent), and it is expanding at the cost of deforestation and land degradation. The national economy relies heavily on the cotton sector, which is the largest contributor to GDP and employs around 70 percent of its labor force. Cotton encroachment is expanding rapidly mostly in the northern region with the involvement of the private sector. Additionally, tax deductions and subsidies for fertilizers and pesticide for its production support the production boost in this commodity.

The management of the PED is currently deficient even though it covers nearly 80 percent of Benin's natural forest areas. Uncontrolled logging in the PED is high, which accounts for between 80 and 100 percent of the exploitation of forest products and is accompanied by a significant tax evasion. A major challenge for forestry policy is the necessary broadening of the tax base for forestry taxation. Current forestry policy is also limited to few forest products. Further, there are no recent and solid assessments of timber production capacities of Benin's forests. These forests are largely degraded, which reduces their effective capacity to sustainably supply to the Beninese domestic market.

## Opportunities for forest-smart development

Key opportunities for forest-smart development are linked to, among others, strengthening the forestry sector and improving control systems, promoting agroforestry activities, enhancing fuelwood production, and promoting an enabling environment to enhance timber production and key high-valued NTFPs (such as Shea). To aim towards a programmatic approach to address deforestation challenges, forest-smart development opportunities can support livelihoods and improve national economic development enhancing collaboration with agriculture, forestry, energy, and tourism sectors. Further, moving toward a landscape approach both at policy- and field-level interventions would lead to limited impacts on forest integrity and resilient ecosystems being strengthened.

In the forestry sector, understanding the community forest governance is an iterative process based on the building of human capital over time. Financial and technical assistance to such structures provides a significant long-term investment for the future management of Benin's forests. Decentralization and privatization of forested lands can contribute to improving sustainable resource use, including forest monitoring and prevention of overexploitation, by giving communities a more direct hand in managing lands that many of them believe belong to them rightfully.

The expansion and development of rural markets in key areas of uncontrolled exploitation, most importantly for charcoal, have proven to support the control of fuelwood and charcoal production and sharing of taxes and fees. The new forest policy aims to set up at least 25 rural markets officially approved with simplified forest management plans based on capacity and quota. The establishment of rural markets supports an operational mechanism for the collection and sharing of taxes and fees.

Developing a coherent information system to improve statistics in forestry production and conservation is key. Without a solid system in place, it is difficult to provide tangible evidence for planning and decision-making purposes. A strengthened monitoring system would also help Benin in improving its accuracy in deforestation and forest degradation, in particular to support the PED. Additionally, with a monitoring, reporting, and verification (MRV) system in place, opportunities to join carbon markets and obtain carbon credits in the forestry sector, either through Reducing Emissions from Deforestation and Degradation (REDD+) or other viable carbon credit mechanisms, would help Benin in increasing financing opportunities in the forestry sector.

## World Bank Group engagement: Proposed approach in the country

The World Bank's added value in terms of investments, analytical work, and technical assistance is visible through its incrementing portfolio for forest-smart interventions. These align with the World Bank's Forest Action Plan FY16–20, the World Bank's Climate Change Action Plan (2016–2020), Benin's Systematic Country Diagnostic (SCD) (2017), and Benin's Country Partnership Framework (CPF). Over US\$670 million is committed under the active lending and portfolio contributing directly or indirectly to sustainable forest management. Ongoing investments that focus on incorporating climate development planning, restoring ecosystem, including rehabilitation and reforestation of mangroves, strengthening the forestry sector, improving energy services, and promoting agricultural diversification and value chains are being implemented.

Aligning with government priorities, this note identifies potential areas of intervention through a suggested programmatic approach. The Government of Benin has identified opportunities and recommendations in the recently validated National Forest Policy. While many of these are already being supported through the World Bank's operations, more could be integrated in key sectors' drivers of deforestation such as agriculture, energy, tourism, and urbanization.

Identified priorities of analytical work, capacity development, and investment needs are illustrated in a theory of change. Addressing current barriers in the different sectors intervening forestry development and conservation will help build opportunities to further enhance the economic and sustainable development for forests and forest landscapes in Benin.

## 1. Rationale of Benin Forest Note

Country Forest Notes (CFNs) are an operational centerpiece of the World Bank Group's Forest Action Plan (FY16–20). CFNs also fall under one of the four priority areas of the World Bank Group's Climate Change Action Plan. Through the Forest Action Plan, the World Bank Group aims to boost the potential of forests to lift people out of poverty and generate lasting social, economic, and environmental returns to client countries. The objectives of a CFN are thus to provide an assessment of the key opportunities and challenges to attain sustainable forestry and forest-smart interventions and how to address them. The Benin CFN was developed using the Productivity, Rights, Investments, Markets, Ecosystem (PRIME) framework methodology under the World Bank Group's Forest Action Plan that analyzes the nexus between forests and economic development and the role of forests as pathways out of poverty.

The Benin CFN was developed through a participatory process involving national government actors for forestry development through interviews and validated by the DGEFC, under the MCVDD. Based on the methodology mentioned earlier, this Benin Forest Note articulates on the status of forests, its land use and land use change, national and international policies, and relevant investments of the forest sector in Benin. It also presents what World Bank investments are currently being implemented supporting a forest-smart approach in the environment, tourism, energy, and agriculture sectors.

Main findings of the PRIME assessment were converted into an action plan for proposed World Bank engagement considering identified threats, current gaps, ongoing project investments, and analytical studies. Finally, the proposed interventions of the World Bank Group are aimed to support Benin in achieving forest-smart development pathway. This note was developed with the aim of serving as an instrument for key dialogues between the Government of Benin, the World Bank, and other key partners for decision making and for any future engagements in the forestry sector.



# Characteristics of forests and the forestry sector in Benin



## 2. Characteristics of forests and the forestry sector in Benin

### 2.1. Forests, land use, and land use change

Benin's surface area totals 11.6 million ha and is characterized by three main climate types: a Guinean or subequatorial zone in the south (latitude 7°30'N) composed of a bimodal rainfall regime with peaks in April–June and September–November, mean annual rainfall of 1,200 mm, and temperature ranging from 25°C to 29°C; a Sudano-Guinean zone of transitional climate in the center (latitude 7°30'N to 10°30'N), with unimodal rainfall varying from 900 to 1,110 mm per year, rainy season in May–October, and annual temperature ranging from 25°C to 29°C; and a dry Sudanian zone in the north (latitudes 10°30'N and 12°N) with semi-arid conditions, one rainy season in May–October and one dry season in November–April, and mean annual rainfall between 800 and 1,000 mm and temperature from 23°C to 31°C.

Benin is located within the Dry Dahomey Gap where savannah dominates the landscape from the north to the coast. In 2015, forests covered 6 million ha (51 percent of the territory). Forests are represented mainly by open stands such as woodland savannahs covering 43 percent of the land surface. Other forest types include dense forests, open forests and bush savannahs, mangroves, forest plantations, and wetland formations. A land use and land use change assessment between 2005 and 2015 shows the challenge of rapid agriculture encroachment at the cost of deforestation, see annex 1. While cropland increased from 3.7 to 5.3 million ha, forestland decreased from 7.6 to 5.9 million ha, showing a 14 percent decrease and a deforestation rate of 1.4 percent per year, see table 1 (OSFACO, 2019). The total mangrove surface was about 5,500 ha in 1995 and decreased by more than 80 percent (Government of Benin 2017e).

Table 1. Land use and land use change in Benin between 2005 and 2015

Land Use	2005		2015		Evolution 2005-2015 (%)
	Area (ha)	Percentage	Area (ha)	Percentage	
Dense forest (semi-deciduous humid dense forest and dry dense forest)	52,400	0.45	36,200	0.31	-30.89
Forest gallery and riparian formation	433,100	3.75	380,600	3.30	-12.12
Open forest and wooded savannah	837,200	7.25	462,800	4.01	-44.72
Forest and swampy savannah	136,100	1.18	122,500	1.06	-10.05
Wooded and shrubby savannahs	6,154,300	53.30	4,924,700	42.65	-19.98
Mangroves	1,800	0.010	1,400	0.01	-25.10
Forest Plantations	36,100	0.31	41,200	0.36	14.10
Fruit Plantation	239,600	2.07	415,400	3.60	73.36
Crop and fallow land	456,400	3.95	237,900	2.06	-47.88
Cultivation and fallow under oil palm trees	3,004,000	26.02	4,645,000	40.23	54.63
Water body	56,100	0.49	57,500	0.50	2.48
Housing	108,400	0.94	188,000	1.63	73.36

Land Use	2005		2015		Evolution 2005-2015 (%)
	Area (ha)	Percentage	Area (ha)	Percentage	
Rocky surface	21,800	0.19	21,900	0.19	0.47
Eroded, bare soil	8,400	0.07	11,000	0.10	30.54
Sandy surface (beach)	1,100	0.01	1,000	0.01	-8.50
<b>Total</b>	<b>11,546,800</b>	<b>100</b>	<b>11,640,000</b>	<b>100</b>	

Source: OSFACO, 2019.

## 2.2. Forests, biodiversity, and provision of ecosystem services

**Forests support ecosystem services and host crucial wildlife populations in critical state of endangerment.** Forests in Benin support essential ecosystem services, harboring biodiversity, regulating climate through carbon sequestration, providing clean water and controlling soil erosion. Forests are also a direct source of food and cash income representing a key asset for food security and poverty alleviation. Sacred forests in Benin serve as a place for social, cultural and religious activities, they also provide food and medicinal plants, firewood and construction materials for the local population. The country has about 2,940 sacred forests covering 18,360 ha, or 0.16 percent of the national territory, which are relics of forests, most of them concentrated in the south, especially by the coast, and constitute places of tourism and traditional rituals (Government of Benin 2019b). In 2012, sacred forests were added as a category of Benin's protected areas legislation (Inter-Ministerial Order No. 0121/MEHU/MDGLAAT/DC/SGM/DGFRN/SA of 16 Nov. 2012) to maintain important ecological clusters and help deter further habitat fragmentation, as these are exposed to deforestation and degradation. The legislation is the first of its kind in Africa and provides legitimacy for traditional beliefs and activities involving the forest as well as lending cultural support for forest conservation. Further, there has been an increased demand from communities to develop sacred forest management plans which has helped to set official boundary demarcations and officially recognize its values for the communities (McNally-Murphy, 2014).

Benin also has two national parks with three contiguous hunting areas covering a total surface area of 1.26 million ha, equal to about 11 percent of the national territory and 54 forest reserves approximately 890,000 ha, equal to about 8 percent of the national territory. The Pendjari National Park (PNP) and the W National Park (PNW) cover 40 percent of a contiguous transboundary protected areas network called 'W-Arly-Pendjari' (WAP, 3.39 million ha) shared with Burkina Faso (36 percent) and Niger (24 percent). Benin has recently included the PNP, already a biosphere reserve, to the indicative list of natural World Heritage Sites to become one of the elements of the future transboundary WAP World Heritage Site (World Bank 2018d). Since 2010, the national parks have received around 6,500 tourists yearly, of which 98 percent visit the PNP. Transboundary challenges in this area include security incidents with terrorism attacks due to cross-border movement, mostly from Burkina Faso.

The forest-savannah mosaic is an important habitat for biodiversity. Significant bioindicator species were identified in the parks including 49 types of bird, 15 types of mammal species, 20 types of aquatic species, and 7 types of reptile species. The WAP is the most significant area for elephant conservation in the entire West African subregion. The flooded areas along the rivers of both the PNP and PNW consist of internationally important wetlands. According to the standards of the International Union for Conservation of Nature (IUCN) for forest classifications, there are two forest areas (Warri Maro and Mount Kouffé) that can be converted into national parks due to the high level of biodiversity they host. As a result, it would increase the percentage of national parks in Benin from the current 11 percent to 13.29 percent. Mangrove coverage, although significantly decreased since 1995, represents key biodiversity hotspots, where about 62 plant species have been identified. Regarding fauna, a total of 30 crustacean species, 42 mollusks, 73 fish species with all eight categories of estuarine environments, 116 bird species, 23 reptiles (including turtles, snakes, savannah monitor, chameleons, and amphibians) have been recorded.

With regard to regulating the global environment through carbon storage, tree savannas also store significant amounts of carbon, mostly in the soil (Grace et al. 2006). Mangrove forests and wetlands, also called “blue carbon hotspots”, store significant amounts of carbon in the soil (86 percent), thus contributing to climate change mitigation. Although not quantified in Benin, ecosystem carbon (C) stocks showed variation of 154–1,484 Mg C per ha in an assessment conducted in the West African region (Kauffman and Bhomia, 2017). The mean total carbon stock for all mangroves of West Central Africa was 799 Mg C per ha (Tang et al., 2015).

Wildlife management in Benin is governed by Act No. 2002-16 of 18 October 2004 on the wildlife regime and its implementing decrees. It is delegated to the National Center for the Management of Wildlife Reserves (CENAGREF: *Centre National de Gestion des Réserves de Faune*) in hunting areas and national parks. In the classified and protected estate domain, wildlife is managed by the DGEFC. This activity focuses on the management of international trade in endangered species of wild fauna and flora (CITES) and the issuance of various hunting or capture permits (DGEFC, 2017).





Elephant in Pendjari National Park. Forests in Benin support essential ecosystem services including harboring key biodiversity. The W-Arly-Pendjari is the most significant area for elephant conservation in the entire West African subregion. Photography by: Shutterstock

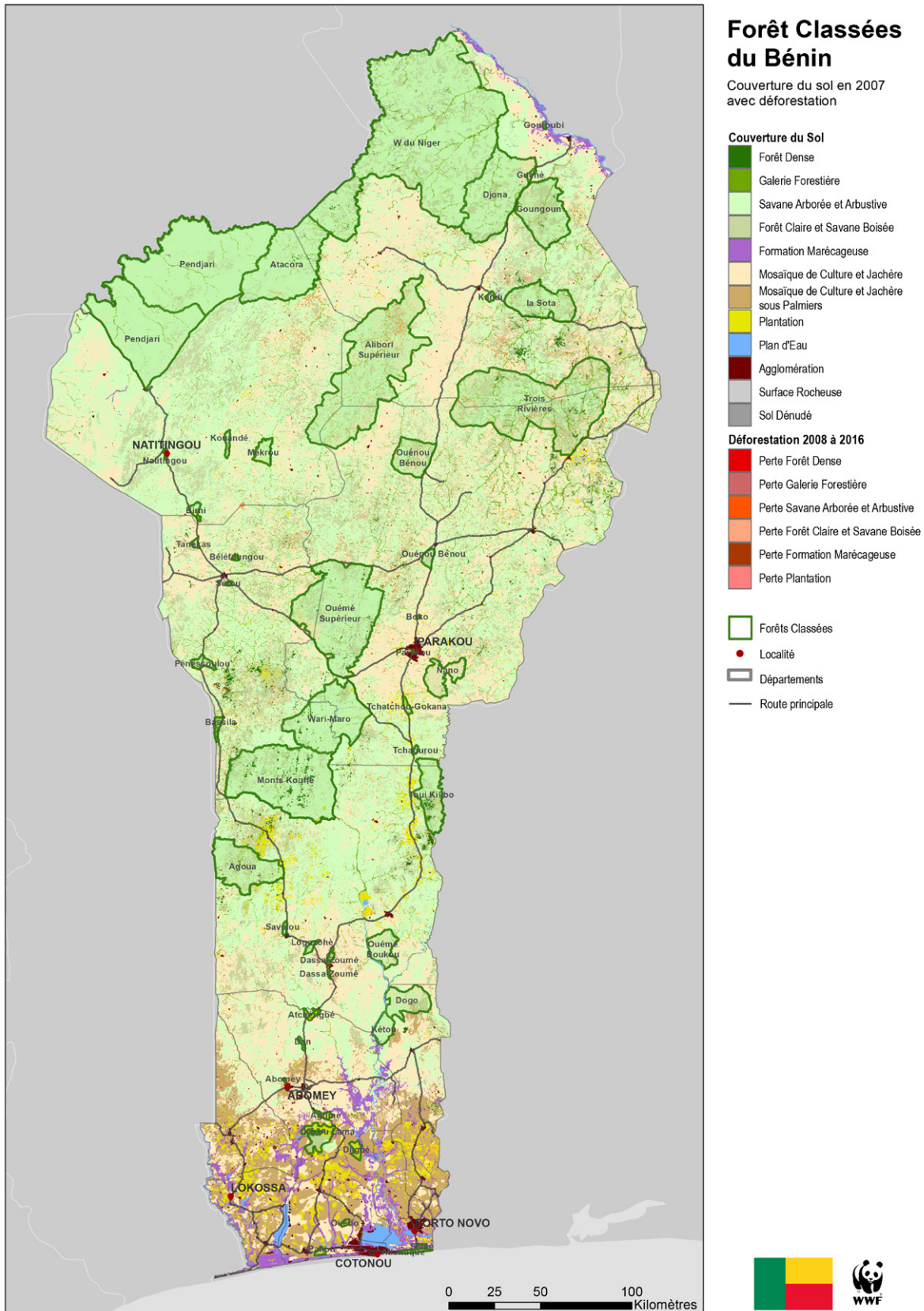


Figure 1. Forests under the Classified Estate Domain (CED), national parks and hunting areas, GFs and reforestation perimeters. **Source:** WWF, 2007.

## 2.3. Forest governance and territorial organization

Forest management in Benin falls under different management authorities: the Directorate General of Water, Forests, and Hunting (DGEFC: *Direction Générale des Eaux et Forêts et Chasse*); the National Office for Wood (ONAB: *Office National du Bois*); and the National Center for the Management of Wildlife Reserves (CENAGREF: *Centre National de Gestion des Réserves de Faune*). All three entities are under the authority of the Ministry of Living Environment and Sustainable Development (MCVDD: *Ministère du Cadre de Vie et du Développement Durable*).

The DGEFC is the leading structure of the Forest Administration, responsible for defining and implementing forest policies and regulations. Other key forest sector centers and boards include the National Center for Remote Sensing and Ecological Monitoring (CENATEL: *Centre National de Télédétection et de Suivi Ecologique*) responsible for forest monitoring and management of forest information system; the National Fund for Forest Development (FNDF: *Fonds National pour le Développement Forestier*) responsible for forest financing; and the Center for Studies, Research, and Forest Training (CERF). For a thorough institutional review, see annex 2.

The Forestry Code is the governing legal framework for the management of Benin's forests and includes a description of the forest use rights afforded to Beninese citizens. It defines two types of forest domains: (a) the CED, including the gazetted forests (GFs), which is subject to a restricted use rights regime, and (b) Protected Estate Domain (PED), free of public use after receiving authorization from the Forestry Administration.

### Forests in the CED

The DGEFC is responsible for the management of the CED, which is considered as Benin's national patrimony. The CED includes (a) 46 GFs<sup>1</sup>, of which 39 GFs (as well as seven reforestation perimeters<sup>2</sup>) are managed by the DGEFC and 7 GFs are managed by ONAB, which has the mandate on the management of forest plantations and produces mainly timber for export, and (b) two national parks (PNP and PNW) with three hunting zones managed by the CENAGREF. One recent change was to entrust the management of the PNP to the African Parks Network.

### Forests in the PED

The PED, comprises the remaining forests in the rural domain covering around 80 percent of Benin's forests. Forests in the PED are authorized for multiple uses by public use, including crop cultivation, livestock grazing, foraging, and extraction of forest products. Municipalities are currently the sole entities at the decentralized level and, as such, are a corporate and financially autonomous body that can be authorized by the Forestry Administration to initiate, organize and raise funds for forest management in the PED<sup>3</sup> (see figure 2).

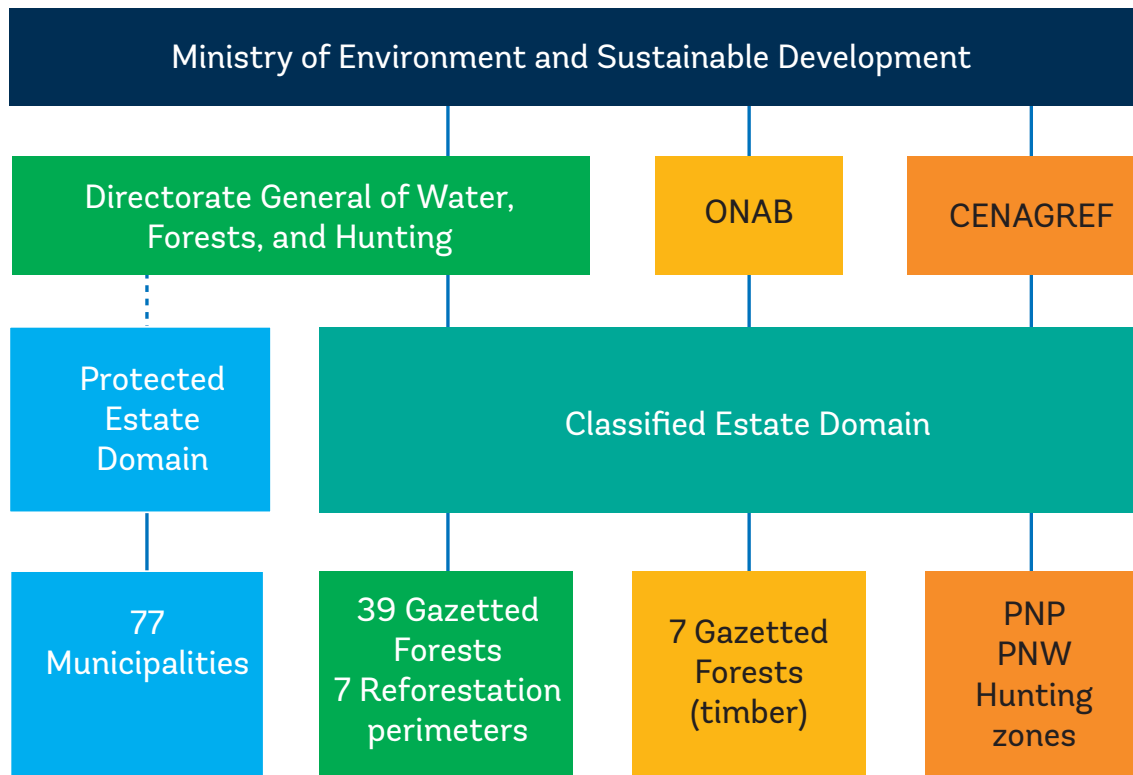
A hybrid forest tenure apparatus of more recent advent is the community forest. Community forest systems have been put in place to allow a municipality or territorial collectivity to make lands available for sustainable forest use, primarily as a mechanism to create rural fuelwood markets and to receive technical assistance from the Forestry Administration to create a compliant forest management plan. Community forest shows much promise but is currently limited to 9 out of the 77 municipalities.

<sup>1</sup> Gazetted forests are those subject to a restrictive use rights regime by individuals or communities after completion of a formal classification procedure.

<sup>2</sup> Reforestation perimeters are bare or insufficiently forested land with risk of severe erosion, gully erosion, or a dangerous landslide and whose reforestation is recognized as necessary. Once reforested, these perimeters can be integrated to the regime of classified forests or in the domain protected estate.

<sup>3</sup> Law No. 97-029 of 15 January 1999 on the Organization of Municipalities stipulates that "the Municipality is responsible for creating and maintaining plantations, green spaces and all public development that seek to improve living conditions," (Article 34), meanwhile "they shall ensure the protection of natural resources notably forests, soils, wildlife, water tables and contribute to better use thereof" (Article 96).

Figure 2. Institutions responsible for the management of forests in Benin



### Forest governance at the local level

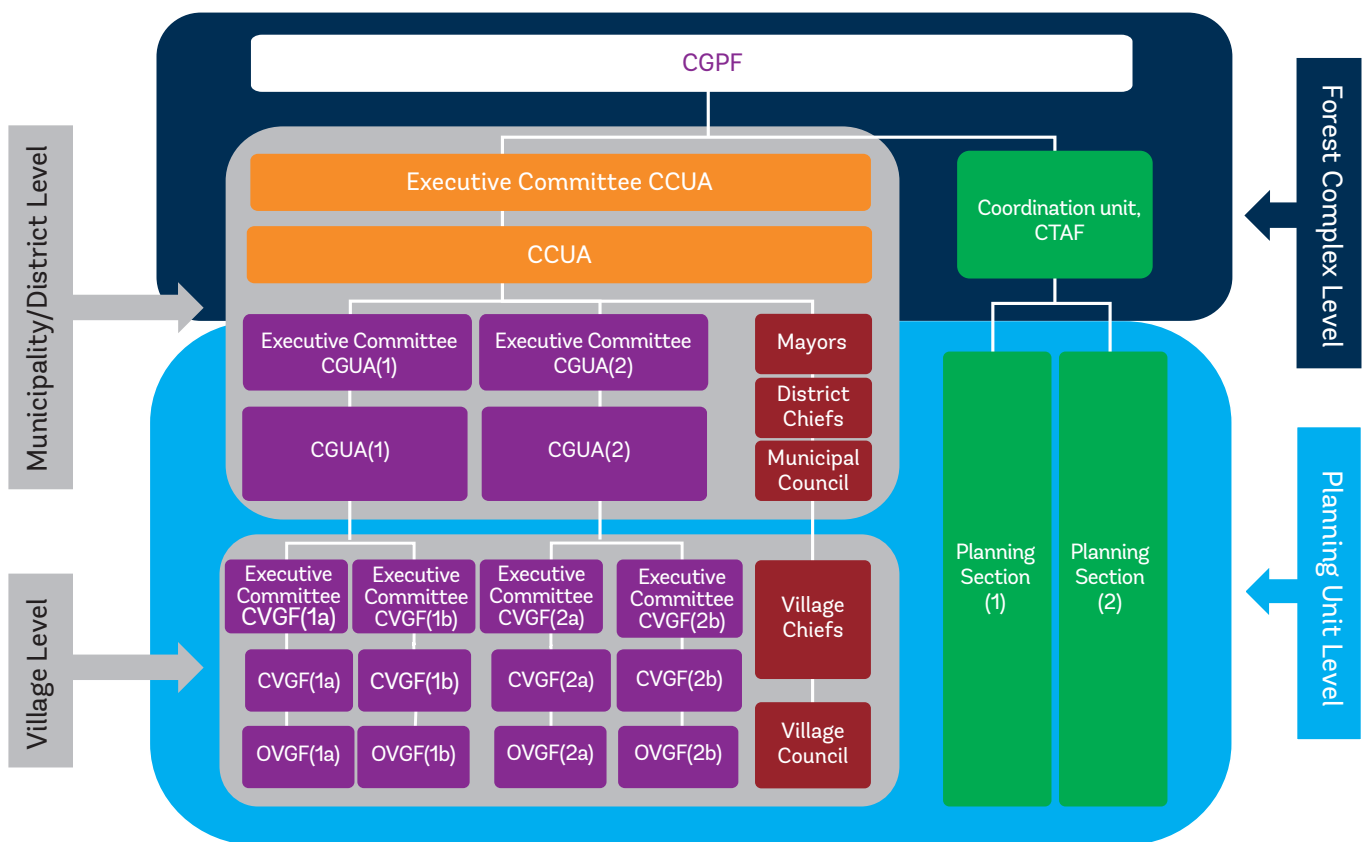
Equally important to forest management are the principles of decentralization and local governance. Forest governance at the local level presents a multitiered arrangement through co-management structures involving participatory approaches between the public sector and local populations. Communities collaborate with the Forestry Administration, nongovernmental organizations (NGOs), and the private sector for the development of forest inventories, studies, and management plans; villagers are key parts of the inventory teams providing indigenous knowledge and insight into sociocultural norms and idiosyncrasies. Additionally, administrative organizations are responsible for involving the population and contributing to participatory approaches.

At the foundational level of forest governance is the ‘Village Forest Management Organization’ (*Organisation Villageoise de Gestion de la Forêt* in French, abbreviated OVGf), which is open to any and all individuals from communities neighboring the forest who take direct part in implementing forest management activities. Above the OVGf is the Village Forest Management Council (*Conseil Villageois de Gestion de la Forêt* in French, or CVGF) whose objective is to implement components from the forest management plans that concern its village. Oriented toward the co-management principle, the committee contains traditional authorities and village notables working alongside with a representative of the Forestry Administration’s Technical Forestry Management Unit (Cellule Technique d’Aménagement Forestier, or CTAF). The CVGF is also an inclusive structure, mandating that women represent at least 40 percent of membership and that there are at least two representatives from the pastoralist communities such as the Peulh.

A CVGF elects participants to the higher Managing Council of Planning Units (*Conseil de Gestion des Unités d'Aménagement* in French, or CGUA), which brings together all of the CVGFs of the villages that fall under the same Planning Unit. The CGUA, in turn, elects members of the Coordinating Council of Management Units (*Conseil de Coordination des Unités d'Aménagement*, or CCUA), the body for co-management of the entire forest and direct interlocutor to the Forestry Administration. Each council has an executive committee authorized to take final decisions.

Finally, the Participatory Forest Management Council (CGPF) is the apex body of the forest complex, formally bringing together the key actors from the villages, municipal governments, and Forestry Administration to strategize and evaluate forest development. For a detailed institutional review and responsibilities at the local level, see annex 2.

Figure 3. Forest governance at the decentralized level



## Technical assistance at the local level

Decentralized forest units are set up through the CTAF. The units provide technical assistance to CBOs, Municipalities, and forest-based entrepreneurs, patrolling and ensuring monitoring and implementation of the forest management plans in the CED. Civil society organizations (CSOs), NGOs, and local communities organized into co-management structures are also involved in forest governance. At the level of municipalities, the *Communauté Forestière du Moyen Ouémé* (CoForMo) was established in 2007 to provide technical assistance and organize the management in portions of the PED, covering around 318,000 ha in the center and north of the country. In collaboration with the Forestry Administration CoForMo provides support for the development of simple forest management plans.

## Forest management plans

Under the participatory approach promoted by the Forestry Code and its regulations,<sup>4</sup> the population is allowed to participate in the exploitation and maintenance of the forest provided that they comply with the terms and conditions of a management plan, which is developed in collaboration with the Forestry Administration. Populations involve the ensemble of villages reliant on the forest resources in question. They actively participate in identifying forest production opportunities, defining prohibitions and sharing roles and responsibilities to oversee proper implementation of activities. There are two types of forest management plans which are developed and approved under the Forestry Administration: for the CED and PED.

For the GFs, 33 out of 36 management plans are in place, of which 11 are ending in 2020 and need to be updated. As stated in the Forestry Code, in the GFs, all use of forest soil is strictly prohibited unless authorized by a forest or environmental management plan. Use rights are limited exclusively to neighboring populations for collection of dead wood, fruits, food, medicine; domestic (non-transhumance) animal grazing along authorized trails; fishing; or other activities sanctioned by the Forestry Administration. Use rights may also be revoked at any time depending on the level of remaining forest cover.

The plans include measures to control forest degradation, participatory management options and wildlife conservation. It is intended that at most 40 percent of the forest would be dedicated for wood production. However, in practice the share will vary among each gazetted forest. The remaining are dedicated to agroforestry (9–20 percent) interventions and forest conservation (up to 50 percent). Harvesting quotas for timber will differ between the management plans and depend on the volume of trees available for its exploitation. The plans also include details on the management of non-timber forest products (NTFPs) activities, but no harvesting quotas are available. Other management planning interventions include agriculture, livestock management, fisheries, monitoring and control of hunting, transhumant activities, and rehabilitation of degraded forests (DGFRN, 2013).

Since 2013, a total of 90 simplified management plans have been developed for sacred forests with a duration of five years. These were developed through a participatory process including sacred forest managers, village communities, the community council, and the Forestry Administration. Measures for forest conservation include prohibition of agriculture, logging, and hunting activities in conservation sites. The Local Forest Management Committees of Sacred Forests (CLFS) are in charge of managing the sacred forests and consist of community representatives, landowners, village leaders, women, and youth representatives which ensure the protection of the forest and participate in management activities when funds are available. Budgets for activities in the plans include reforestation of degraded lands with autochthonous species; fire management; exploitation of medicine plants; and income-generating activities such as beekeeping, rabbit breeding, and improved cookstoves and sensibilization for conservation of forests (IAMD, 2013).

<sup>4</sup>Under Article 16 of the Forestry Code Regulations authorities are encouraged to manage forests "as much as possible... following participatory methods that associate adjacent populations." As outlined under Article 40 of the Forestry Code, forest management plans are to be drafted with community participation.

In the PED, there are currently 18 simplified management plans in place with a duration of 10 years. Similar to sacred forests, the plans were developed through a participatory process including village communities, community councils, CoForMo, and the Forestry Administration. The plans include forest production inventories from the production zones and harvest quotas for NTFPs, timber, and fuelwood production. The general conditions of forest exploitation remain those prescribed by the decrees and orders implementing Law 93-009 of 2 July 1993 (DGFRN, 2010).

## 2.4. Land rights and tenure linked to forest management

Forest rights are currently governed under Law No. 93-009 of 2 July 1993 ('the Forestry Code') and its associated regulations, found in Regulatory Decree No. 96-271 of 2 July 1996 ('Forestry Code Regulations'). Forestry Code Regulations clarify that title deed or right of use includes both formal (where proof of ownership or of use rights is given by formal documents such as titles or deeds) and customary law with unclear land demarcations.

The Forestry Code provides individuals and communities in the PED with rights of land use for agriculture and extraction of forest products, which are open to regulation, suspension, or even prohibition. It also reserves the right to reject a permit if it is of the nature that provokes forest and environmental degradation (for example, compromises soil integrity, water sources/basins, coastal protection and wind breaks, conservation, and even public health or national defense). This ultimately limits users to usufructuary rights, with the Beninese State as the ultimate landowner, since a forest landowner cannot alter forested land without express authorization of the State (Trekpo, 2003). The Forest tenure system applies of short term (3-6 months) harvesting license (permis de coupe) or a more recent system by auction (vente de coupe), the latter has not yet been applied in practice. To encourage private owners to engage in reforestation activities the Government exempts them from forest-specific taxation on harvested forest products. In natural forests, low taxes on forest products are imposed provided that the management was sustainable.

In the rural areas of the PED, customary<sup>5</sup> land tenure systems are still common and dominate in the savannah areas of the north of Benin where the population density is low. In the south, the high demand for land led to the gradual personalization of land rights. Accordingly, allocated land became the property of the beneficiary. Land may be disposed of either temporarily or permanently, from one person to another through personal property, inheritance, donation, purchase, borrowing, sharecropping, and renting (ADF, 2005). Traditional leaders have much influence in their communities regarding resource management. Access to land is commonly managed by village chiefs exercising customary law to settle land disputes, guarantee equity in natural resources use, and orient community development around natural resource management.

Conflicts related to the increasing pressure on natural resources and the absence of land use titles; land conflicts over inheritance; and disputes between villages, farmers, and pastoralists are common. The Rural Land Use Plan (PFR: *Plan Foncier Rural*), recognized by the 2007 Rural Land Act and updated in the Land Tenure Code (2013), was introduced as a decentralized approach, more affordable and more accessible for formalization and securing land rights. It differs from more standard land formalization process since it considers that customary arrangements provide legitimate claims to property to be formalized. Further, formal property rights are set up through a decentralized procedure which is less costly than more complex centralized registration of ownership titles within a national cadaster (Goldstein et al., 2015). Currently, 418 villages have implemented the PFR providing households and landowners with security.

<sup>5</sup>Based on oral tradition, customary land tenure comprises ancient rules and notions of ownership and agreements are primarily verbal, although written documentation increasingly accompanies the sale and lease of land. According to the customs of Dahomey, there are three main types of customary land tenure: (a) familial property, which is typical in the southern regions; (b) collective or communal property, stemming from claims of indigenoussness to the territory, which is characteristic in the central and northern regions; and (c) sacred religious grounds, considered as public domain (MEHU, 2012).

## 2.5. Forest loss and change

Deforestation and subsequent land degradation is estimated to cost over 3 percent of Benin’s gross domestic product (GDP) (World Bank, 2018a). Global estimates show that between 2001 and 2018 Benin lost 0.55 million ha (equivalent to emissions of 70 million tons of CO<sub>2</sub>-eq), reflecting an alarmingly high deforestation; see figure 4 (Hansen et al., 2017). The forest area per capita also decreased from 1.63 ha in 1980 to 0.87 ha in 1995 and is expected to further decrease to 0.29 ha in 2025 if current deforestation trends are maintained. Most of the forest cover loss between 2007 and 2017 occurred in forests of the PED (non-GFs). Remaining forest loss occurred in the designated protected areas of the CED (World Bank, 2018a). This consequently requires specific protection strategies for sustainable management both in the CED and PED.

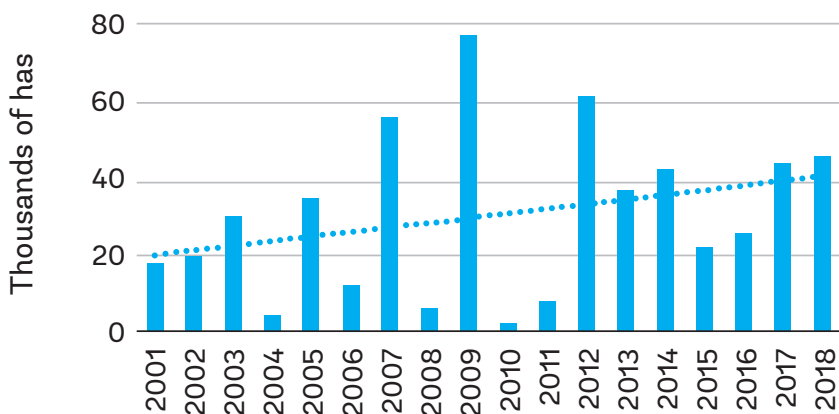


Figure 4. Forest loss in thousands of hectares in Benin 2001–2018. Source: Hansen et al., 2017.

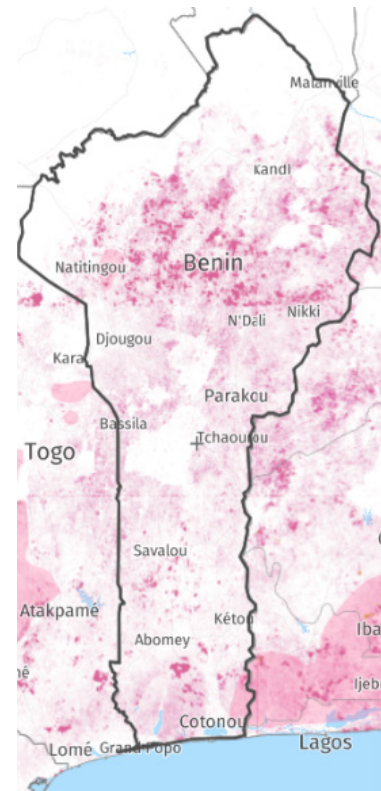


Figure 5. Tree cover loss with >10 percent canopy density likely to have recently occurred (2003–2019). Source: Global Forest Watch, 2019.

## 2.6. Forest’s contribution to the national economy

**The forestry sector’s contribution to GDP remains undervalued and not properly assessed.** In 2009, the contribution of the forestry sector to GDP was estimated to be 6 percent or CFAF 14.3 billion (US\$242 million) (World Bank, 2010). Wood production is currently not meeting the needs for economic growth in the forestry sector. The current forest products include fuelwood, charcoal, timber, and other items. Sawn wood products account for almost three times the value of fuelwood (World Bank 2018a).



**Forest plantations cover 0.3 percent of the forest cover or 40,424 ha.** Timber plantations are established in 20,000 ha under delegated management of ONAB, of which 14,000 ha are Teak and Gmelina species. ONAB's production capacity varies between 16 and 180 m<sup>3</sup> per ha per year and reaches a yearly production between 45,000 and 60,000 m<sup>3</sup> aimed for export. Timber plots between 1 ha to 130 ha are exploited regularly according to the management plans. Its five-year strategic plan forecasts an increase of wood production of more than 500 ha per year through the expansion of forest plantations. National timber demand lies between 120,000 and 160,000 m<sup>3</sup> per year. Statistics on the production of timber plantations run by municipalities and by private individuals in the PED are almost nonexistent and municipal plantations are not yet mature for exploitation. The Government aims at increasing the volume of timber annually to 250,000 m<sup>3</sup> through large-scale plantations to generate forest-related jobs and increase public revenues.

**Although it is not a country with strong forest potentials as Central African countries, Benin exports a significant quantity of timber.** The volume of exported timber varied from 68,000 m<sup>3</sup> in 2010 to 102,000 m<sup>3</sup> in 2018. Benin's timber products come from both natural forests and plantations. Most timber products exported in 2018 included squared timber (28,958 m<sup>3</sup>) following by logs (23,110 m<sup>3</sup>) and rafters (13,791 m<sup>3</sup>); see figure 6. Teak is the main export specie, followed by Gmelina (454 m<sup>3</sup>, out of which 315 m<sup>3</sup> exported in the form of logs). Regarding natural forest timber, species in high demand include Vène (*Pterocarpus erinaceus*), Lingué (*Azelaia Africana*), and African mahogany. Vène and Lingué are highly prized in the international market and thus under high pressure, which led to the suspension of their exploitation in early 2018. Given this ban, the development strategy aims for the establishment of plantations, preferably in areas favorable to the growth of Teak and Gmelina (southern and central areas) and some climatic enclaves (Ina and Bassila). The management plans of these zones dedicate on average 40 percent of the GFs' surface to wood production, half of which are devoted to timber plantations (World Bank 2018a). There are 30 firms that buy timber from ONAB and timber prices are at CFAF 200,000 per m<sup>3</sup> (US\$340 per m<sup>3</sup>). The main timber export countries are China, India, Singapore and Thailand.



A well established Teak plantation on previously degraded land. The plantation was established through the Additional Finance to the Forests and Adjacent Lands Management Project by the World Bank and managed by DGEFC.

Photo by: Laurent Valiergue .

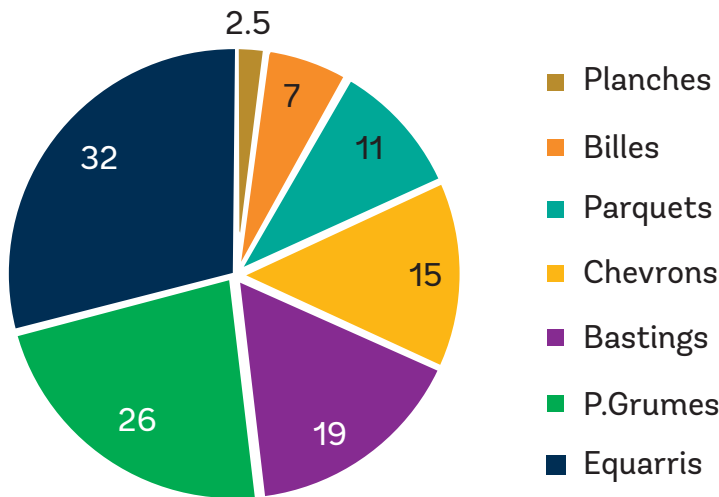


Figure 6a: Percentage of timber products exported in 2018. Source: DGEFC, 2019.

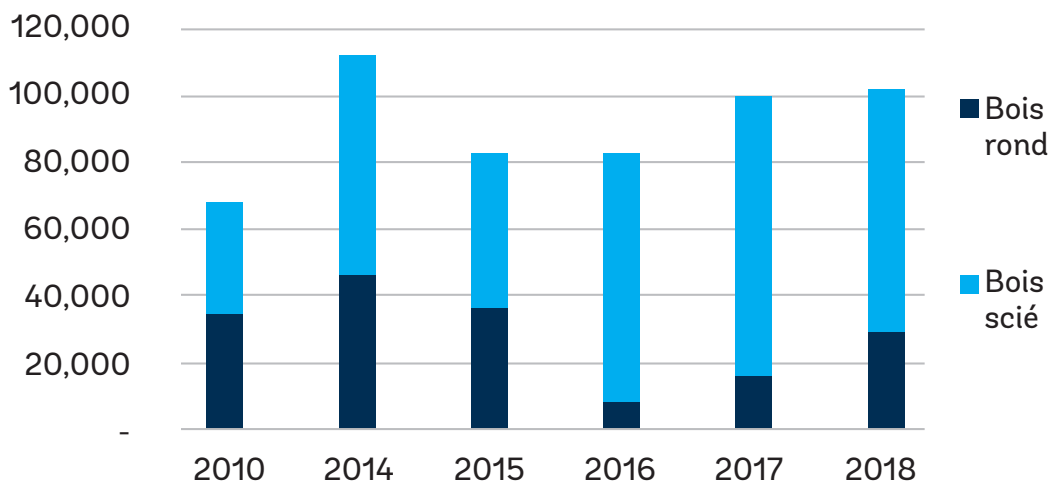


Figure 6b: Export of round and sawn wood from 2010 to 2018 in m<sup>3</sup>. Note: After the temporary suspension of the granting of approvals to users (wood operators, traders, and industrialists) by decision of the Council of Ministers of 13 April 2016, ratified by Order No. 53/MCVDD/SP of 15 April 2016, the issuing and renewal of approvals resumed in 2017. Right: Percentage of timber products exported in 2018. Source: DGEFC, 2019.

**Statistics on domestic consumption of timber are nonexistent as registration is decentralized.**

The number of people who are employed under the timber sector is not properly assessed. In 2018, there were 27 small and medium enterprises (SMEs) involved in timber export. Additionally, there were 445 private actors with agreements for operating across different stages of the timber value chain for forest exploitation, trading, and industry. Simple licenses are offered based on the conditions for each area, either PED or GFs. The costs of the licenses are in CFAF per m<sup>3</sup> and will depend on the type of species, linked to taxes as indicated under the finance law.

**Benin imported timber mainly from Nigeria amounting to 3.13 million m<sup>3</sup> in 2017.** Timber import into Benin is authorized in accordance with Law 93-009 of 2 July 1993 on the forest regime and its implementing regulations. All wood from a foreign country must be accompanied by supporting documents (cutting permit from the country of origin, CITES certificate if necessary, phytosanitary certificate, and any other document that may justify the legal origin of the wood) and must bear the timber marks of the country of origin. The DGEFC, based on a request accompanied by the supporting documents listed above, issues an import authorization to the applicants. The applicant is issued a special laissez-passer pass by the Chief Inspectorate territorially competent on each load of imported

wood. In general, it is observed that wood users are struggling to comply with the import conditions described earlier. Cases of irregular importation of wood are then recorded and are the subject of forest litigation managed in accordance with the laws in force. As such, 3,138.48 m<sup>3</sup> of wood, mainly composed of the species *Pterocarpus erinaceus* and *Azelia africana*, are imported from Nigeria through the entrances of Kétou, Savè, Tchaourou, Nikki, and Kalalé. There were no recorded imports of timber from Togo (DGEFC, 2017).

**Fuelwood and charcoal production contribute 2.4 percent to the national economy and mainly informally.**

At present, much of the forested area is used for fuelwood and provides 46 percent of the energy consumed in the country. In 2018, registered fuelwood consumption was 2.7 million m<sup>3</sup>; see figure 7. The total quantity of wood energy marketed and consumed in urban centers was around 642,800 tons in 2017, of which 78 percent was from illegal logging, compared to 22 percent from legally controlled logging in the GFs (World Bank, 2018a). Fuelwood is harvested without due attention to forest management plans’ guidelines, as the number of charcoal producers is high. The mean value of fuelwood is CFAF 5,500 per m<sup>3</sup> (US\$9.5 per m<sup>3</sup>) in rural areas and CFAF 7,500 per m<sup>3</sup> (US\$13 per m<sup>3</sup>) in urban areas.

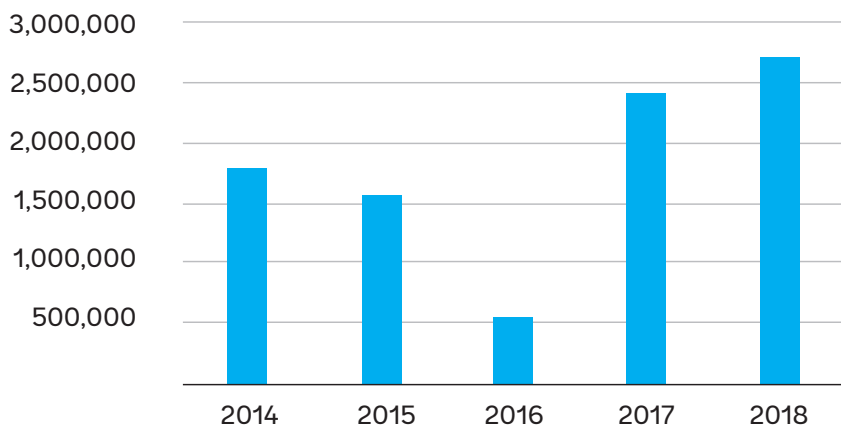


Figure 7. Registered fuelwood consumption (m<sup>3</sup>) from main cities, roads, and markets between 2014 and 2018. After the temporary suspension of the granting of approvals to users (wood operators, traders and industrialists) by decision of the Council of Ministers of 13 April 2016, ratified by Order No. 53/MCVDD/SP of 15 April 2016, the issuing and renewal of approvals resumed in 2017. Source, DGEFC, 2019.



Fuelwood harvest in Pahou forest reserve in south Benin, managed by DGEFC. Photo by: Salimata Diallo Folléa.

**The wood energy value chains estimate employing 200,000 people, with annual sales reaching nearly CFAF 7 billion (US\$12 million) per year (DGFRN, 2011).** Youth and women dominate the workforce. The value chain offers significant margins for sustainable growth through more efficient carbonization methods, improvement of harvesting techniques, mechanisms of natural production areas, and the increase in plantations for wood energy (World Bank, 2018a).

**The charcoal value chain is currently not sustainable with low yields of processing technology.** There is need of 100 kg of fuelwood to produce 15 kg of charcoal. Additionally, charcoal production lacks a license mechanism. Charcoal traders with an agreement are subject to pay fuelwood taxes in rural markets. The system involves ticketing sacks of charcoal, which also includes charcoal from uncontrolled exploitation: CFAF 630 (US\$1.07) for red ticket - uncontrolled exploitation and CFAF 470 (US\$0.80) for blue ticket - sustainable managed area. For illegal logging of timber or charcoal, the forest Law 93-009 July 2 states penalties of CFAF 50,000–500,000 (US\$85–850) or prison from three months up to three years.

**Public and private investments in Benin are expected to drive economic growth in the short and medium term by improvements in the business environment.** Political stability and reforms to the business climate will support private investments, providing a recovery in neighboring Nigeria that will support a rebound of the re-export trade. Further, a successful implementation of the Government's Action Plan (2016–2021) (PAG: *Programme d'Actions du Gouvernement*) will also strengthen medium-term economic growth. Government investment plans are also intended to accelerate, facilitate, and leverage private sector investment through a public-private partnership (PPP) basis.

**The potential to improve economic growth is also visible for other products besides cotton, including cashews, mangoes, pineapples, and wood products.** However, challenges remain in mobilizing the private sector as a source of capital investment and entrepreneurship. These include incomplete regulatory and policy reform process and weaknesses in the governance system that inhibit access to finance, water, land, and technology, and limit the ability to take advantage of the fast-growing urban, regional, and international markets (World Bank, 2018b).

In the most recent *Doing Business Report* the country was ranked 151 out of 190 countries reflecting a difficult environment to make business, which may also affect the low local added value (World Bank 2018c). There is also persistent lack of competitiveness, due to noncompetitive factors of production, difficult access to finance, high energy costs, lagging public-private dialogue, poor human capital, and the lack of incentives to develop value chains (World Bank 2018b).

**Total demand of wood for the national and international market is higher than forestry potential of the country.** Wood industry is currently under-developed and most of wood product is exported as raw material. Factors affecting the increase in productivity in forest and wood industries include, among others, a limited supply of skilled labor, outdated wood processing technologies and equipment in sawmills, which constrains the development of high value-added products, and limited business capacity and bank investments. In addition, as there is currently no certified timber available in the country, exports are limited to countries that have low requirements on environmental and social standards, such as in Asia. Buyers also control the price of timber products, which is commonly lowered.

**Shea butter is the most developed value chain in NTFPs and has a high national demand.** The general evolution of Benin's shea butter exports to the European Union (EU) market is volatile, making Benin a marginal supplier with a low level of product positioning (Faladé, 2018). National market demand accounts for 50 percent, the sub-regional 43.75 percent, and the international market 6.25 percent (Sohinto and Akoha, 2012). One portion is also exported to Nigeria, Togo, Burkina Faso, and Ghana in the form of nuts. Current challenges at the level of commercialization include non-organized value chain actors (collectors, processors, and so on), high price volatility and lack of transparency in the price of nuts and shea butter on the markets, disparity in quality standards accepted by buyers, insufficient marketing supervision, lack of butter pricing systems, insufficient storage capacity, low tracking, and insufficient financial support for actors in the sector (Government of Benin, 2018c).

## 2.7. National and international commitments for sustainable forest management

**The forest policy (Law 93-009 of July 1993 that governs the forest regime in Benin) is being updated to incorporate new guidelines for sustainable forest management.** This new updated policy recognizes challenges considering the magnitude of forest degradation and high deforestation rate. To apply sustainable forest management and for protection from the risks of climate change, the policy targets a number of directives regarding subsidies and support to decentralized governance; rural development and food security; strengthening of participatory approach and partnership between the Forest Administration and communities; support to an enabling environment for the private sector and PPPs; strengthening of the forest sector's contribution to the national GDP, the state budget; and the sustainable management of natural resources for biodiversity conservation and climate change adaptation and mitigation (Government of Benin, 2019b).

In December 2016, the new government adopted PAG structured around 45 flagship projects aimed at improving the productivity and living conditions of the population. Priorities identified for management of natural resources included the need for action and priority investments in (a) strengthening of overall resilience to climate change, (b) sustainable management of forest resources and biodiversity, (c) program development to fight coastal erosion, and (d) improving of the livelihoods of local communities.

Policy and strategy documents have also been produced to improve the management of forests. These include the National Program for Sustainable Management of Natural Resources (2008) and the National Strategy for Rural Wood Markets (2008). The Benin Low Carbon and Climate Change Resilient Development Strategy 2016–2025 includes actions aiming to strengthen the resilience of local communities and economic production systems and to strengthen community protection, particularly those most vulnerable to natural disasters.

**Benin has also ratified several international conventions related to management and conservation of forest resources. Benin emphasizes the need, in its climate change actions, to alleviate extreme poverty and promote economic growth which are reflected in its Initial and Second National Communication and its National Adaptation Programme of Action (NAPA, 2008). In addition, it has ratified the** United Nations Convention to Combat Desertification of the United Nations (UNCCD) in 1996 for which it developed a National Action Programme in 2000 and the Framework Convention on Climate Change (UNFCCC) in 1994. Benin signed the Paris Agreement in April 2016 and ratified the agreement in October 2016 with it entering into force in November 2016. Six adaptation priorities were identified in NAPA climate information, agriculture, energy, water resources, health, and coastal protection. These were reviewed and updated in Benin's nationally determined contribution (NDC). Benin's expected overall emission reduction target is 16.17 percent, committing to an unconditional reduction of 3.63 percent between 2021 and 2030. Land use change is a major cause of emissions in the country; the implementation of the measures envisaged in Land Use, Land Use Change and Forestry (LULUCF) would contribute to increase its cumulative sequestration capacity of 32 Mt CO<sub>2</sub>-eq in 2021–2030 including 76.6 percent of conditional contribution, by limiting deforestation (23.9 Mt CO<sub>2</sub>-eq) and establishment of forest plantations (8.1 Mt CO<sub>2</sub>-eq). Benin's NDC under the UNFCCC aims to reduce degradation rate by half in 2015–2030 and targets 15,000 ha per year of plantations to contribute to global emission reductions. Other commitments include Convention on Biological Diversity (CBD) through National Biodiversity Strategy and Action Plan (NBSAP, 2011–2020).

## 2.8. Forests' contribution to livelihoods and sustainable development

**Benin was a pioneering country in West Africa in co-management participatory processes benefitting communities with the collection of taxes and royalties from legally exploited forest products.**

Regulatory texts state that communities receive between 10 and 40 percent of taxes and fees on forest products, according on the type of exploitation. The share is intended to finance community development infrastructures such as roads, bridges and schools. However, regardless of the tax collection system and

forest royalties, the tax collection rate is weak. Nearly 90 percent of possible revenues do not reach the communities and the Forest Administration. This is due to unlicensed wood harvesting, the cumbersome process, and weak enforcement of the benefit sharing mechanism (DGFRN, 2007).

According to the law, private enterprises are obliged to collaborate with communities living inside the forests. ONAB's incentive-based mechanism employs local communities for forest maintenance activities in the timber production. Riverine communities are also allowed to collect forest residues (branches and twigs) after wood exploitation at different stages of the plantations, which are used for fuelwood consumption. Communities participate in logging activities and will receive 50 percent of net revenues from ONAB (the case at the early stage of plantations, after first or second thinning). The revenues are used to build schools, hospitals, or other community development projects. This mechanism is perceived to be more effective than revenues received from tax collection as it has also created employment opportunities for communities. ONAB is thus contributing between CFAF 5 and 10 million (US\$8,409–16,803) per year for community development projects.

## 2.9. Sustainable forest management for poverty alleviation

**The contribution of the forest sector to poverty reduction is poorly quantified but provide well-being of rural populations through the provision of NTFPs.** Globally, there are few studies that have addressed the contribution of wild products to the total revenue of rural households. A couple of studies on the economic importance of NTFPs in the northern region show an increase in the total annual revenues per household. The inclusion of NTFPs in total household income also reduces inequality between households (Bonou, 2013; Heubach et al., 2011).

**NTFPs are in rapidly growing demand but their value chains are poorly organized.** The traditional nature of NTFP harvesting and the poor organization of these sectors do not favor good control of the sector by the Forest Administration. In addition, the revenues generated by the marketing of certain NTFPs of high economic value (shea nuts, cashew nuts, african locust bean seed, and so on) are included in the category of revenues from agricultural products, minimizing the contribution of the forestry subsector to GDP. To strengthen the control over the exploitation and marketing of NTFPs, an export tax for these high-valued NTFPs was adopted in the 2018 law of finance (DGEFC, 2017).

A national strategy for the valorization of NTFPs was developed with the support of the Food and Agriculture Organization of the United Nations (FAO) targeting 10 priority products. Five of these were considered of main economic interest: shea butter, african locust bean, baobab, tamarind, and *Garcinia kola*. However, the level of natural potential in relation to their demand differed greatly. While there is a strong pressure on shea, african locust bean, baobab, and tamarind species there are products of high value, such as honey or wild mushrooms which are yet to be exploited to their full potential. The capacity to provide edible mushrooms in all GFs was calculated to be around 32,000 tons of fresh edible mushrooms per year by 38 wild edible species. But less than 2 percent of this potential is currently being exploited, as its value chain is not organized. Instead, much of the produce is lost or traded in little or no processed form (World Bank, 2018a).

**Shea butter represents Benin's third largest export product with a contribution to GDP estimated at 1.23 percent.** Export revenues of shea kernels are estimated at CFAF 1.3 billion (US\$2.2 million) per year. Companies exporting nuts and shea butter create job opportunities for youth and women. At the level of semi-modern artisanal harvesting and processing, around 600,000 female collector-processors are involved either on their own or working for processing units. The remaining actors include 1,000 collectors, 500 professional buyers, and about 10 exporters. Yet, there are a number of challenges in shea butter production and value chain which hinder its efficient development. These include among others the low productivity of shea trees due to ageing, aphid attacks, bushfires, deforestation, high labor, and energy demand for transformation (Government of Benin 2018c).



Raw shea nuts. Shea value chain is key NTFP supporting livelihood in Benin.

**Honey and baobab production have great potential as income generating non-timber forest products in Benin.** The local demand for honey is high and it was estimated that honey production in the GFs could generate a turnover of CFAF 80 million (US\$140,000) per year. This support could also include improvement in its productivity, aiming to achieve at least 25 liters per hive per year and increase the number of hives. For baobab production, 2,500 tons of pulp are produced annually by 481,800 baobab trees present in and around the GFs. These are transformed into syrup and juices by artisanal or semi-industrial units. It was estimated that if the value chain received support through tree conservation, improvement of harvesting techniques, transport and processing technologies and marketing, it could generate a turnover of CFAF 500 million per year, out of which CFAF 100 million would be allocated as net income to the actors (women and youth) of the sector (World Bank, 2018a)



Honey value chain in Benin's Forests for improvement of livelihood.  
Photo by: Manuela Ravina da Silva (top) & Shutterstock (bottom).



## 2.10. Contribution of sustainable forest management through gender equality

Data on women's contribution of forest management through gender equality are non-existent. There are considerable opportunities for improving gender equality in the forest sector, turning women's informal and subsistence-level involvement into economic and political empowerment. The proportion of female employees in national forestry administration is low. Women dominate the workforce in the field of NTFPs at the local level. As forests provide many hundreds of marketable products and services, women's enhanced access to these has strong potential to improve gender equality.

The World Bank's Gazetted Forests Management Project conducted a gender gap analysis to identify key issues to bridge the gap between gender and empowerment in the forestry sector including economic empowerment, access to business, capacity building, or financing opportunities. The study revealed that forest management and agroforestry support and trainings should be aimed at institutional strengthening (and even more inclusive) with existing forest management groups/committees. The management of NTFPs should include activities aimed at strengthening value addition and links to markets promoting initiatives for women's groups or groups with male and female members that focus on activities aimed primarily at generating income controlled by women; regional workshops or 'fairs' that link local forest product producers and groups to national and international buyers/markets, with at least 30 percent of supported participants female; performance-based contracts for planting and protecting trees on farms, as well as inside the GFs, must not be signed only by men (or with a requirement that the signatory is a landowner) but by both spouses or women alone in the case of female-headed households (World Bank, 2019a).

3

# Drivers of deforestation and forest degradation



## 3. Drivers of deforestation and forest degradation

In Benin, forest cover transition is mainly associated with agriculture expansion, timber wood collection, fuelwood and charcoal production, urban expansion, and illegal hunting which represent direct drivers of deforestation and degradation. Indirect drivers of deforestation are related to the demographic growth; competing models of development of the sectors of production (agriculture, livestock, and forestry); weak forest governance and law enforcement; land and forest rights; and lack of incentives for the support of sustainable forestry and agriculture activities.

### 3.1. Direct drivers

#### Agriculture

**The agriculture sector is the largest contributor to GDP (25 percent).** However, production and income are growing at the cost of deforestation and land degradation. The national economy relies heavily on the cotton sector which is the largest contributor to GDP and employs around 70 percent of its labor force (15–64 years old). In 2018, the main export products were raw cotton (CFAF 246.67 billion [US\$422 million]), cashew nuts in shell (CFAF 70.35 billion [US\$120 million]), and oilseeds and oleaginous fruits (CFAF 19.35 billion [US\$33 million]). These products are mainly exported to Bangladesh, India, and Vietnam (INSAE, 2019).

**Extensive shifting slash and burn agriculture is the main driver of deforestation.** In the GFs, the absence of forest delimitation by the Forest Department (due to lack of financial resources, equipment, and human resources) has led to a development of enclaves in the forest dedicated to agriculture. Farmers are currently found scattered throughout the GFs instead of being regrouped with dedicated agricultural land. In addition, there are also challenges linked to agricultural migration. In search of fertile soils, farmers abandon degraded areas in the northwest and the center and settle in the GFs. This uncontrolled occupation induces forest clearing, bushfires, incineration of entire trees, and persistent increase of agricultural encroachments. It is aggravated by the uncontrolled incentive for cotton culture, the absence of improved agricultural techniques to restore and maintain soil fertility, the misuse use of pesticides and herbicides, and the absence of Forest Administration in the field for its surveillance. The large-scale use of herbicides and pesticides is a new and fast-growing factor threatening the GFs' forest cover and biomass, leading to increased degradation. It is induced by the lack of job opportunities in large areas and the lack of control on their use, despite regulatory texts for its use exist, these are non-enforced (World Bank, 2018a).

The rapid deforestation trend due to agriculture is likely to continue. In PAG 2016–2021, agriculture is a main strategic sector for economic development to contribute to the creation of jobs for youth and whereby investments of pineapple, cashew, cotton, maize, cassava, and rice value chains are prioritized. The private sector also plays a significant role and an enabling environment will be prioritized for its development.

Cotton encroachment is expanding rapidly mostly in the north region with the involvement of the private sector. The production of this cash crop was over 600,000 tons in 2018 and was aimed to increase up to 700,000 tons in 2019 (Government of Benin 2017b). Additionally, tax deductions and subsidies for fertilizers and pesticide for its production support the boost in this commodity. Despite this, cotton yields have decreased with time, which might trigger expansion of new lands to boost production; see figure 8.

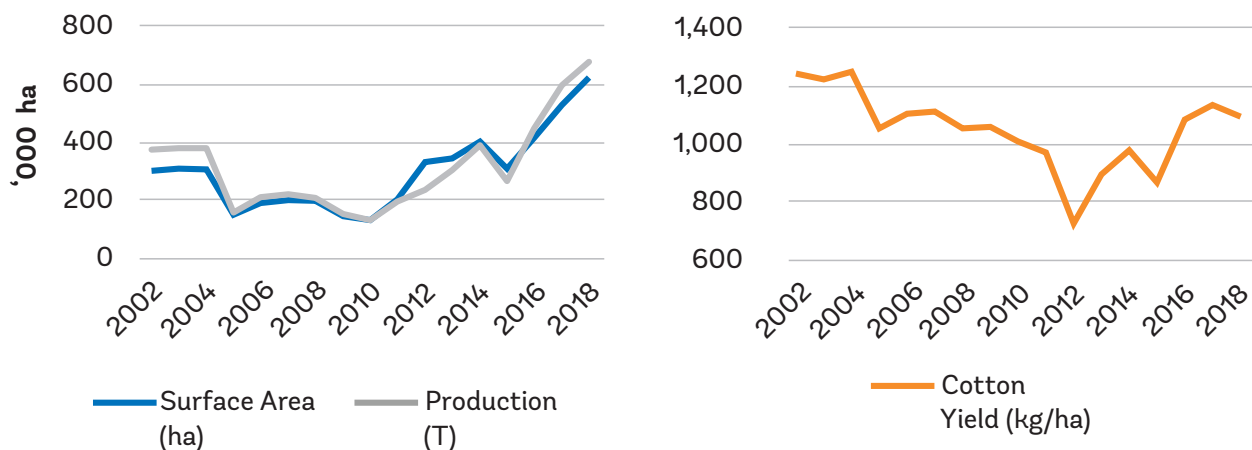


Figure 8. Left: Cotton expansion and production increasing with time. Right: Volatile and decreasing cotton yield trends with time. Source: DSA, 2019.

**Transhumance is also a key phenomenon of forest degradation.** It concerns Beninese herders and Burkinabe and Nigerian transhumant entering forest areas in search for water points and pastures. With no proper management and control in place, local and foreign herds that migrate in the GFs increase the pressure on forest degradation. Due to the importance of livestock farming these practices are more common and widespread in the north and exacerbated by; (a) former transhumant herders who have permanently settled in GFs and facilitate new transhumant settlement against payment of taxes and rents to locals; (b) the lack of physical demarcated transhumant corridors or agricultural encroachment of the existing ones; (c) the absence of managed and secured grazing areas and agro-pastoral infrastructures; and (d) conflicts arising between transhumant herders and agricultural farmers (World Bank, 2018a). According to national statistics and FAO, more than 40,000 cattle enter the PNW each year which also impact on wildlife and fauna. The ineffectiveness of the parks monitoring system is linked to the inadequacy of staff and equipment and lack of motivation of service staff in the parks (Government of Benin, 2018a).



Transhumance is a common phenomenon in Benin, aggravating forest degradation.  
Photo by: Salimata Diallo Folléa.

## Energy

**With inadequate energy supply, wood fuel and charcoal for cooking represented the highest share (46.2 percent) of the country's energy balance to meet its demand in 2017.** The production of charcoal required 3.37 million tons of fuelwood in 2017 compared to 2.5 million tons in 2010. The significant high share of wood energy to produce charcoal is explained by the low carbonization yields, which translates into a considerable impact on natural forest resources, accelerating the decline of forest cover and exacerbating the effects of climate change.

As of today, only 33 percent of Benin's households have access to electricity, which is below Sub-Saharan Africa's average electrification rate of 35 percent and is compounded by deficiencies in quality of service (Government of Benin 2017c). The electrification rate also reveals significant disparities between urban and rural areas. About 59 percent of the urban population has access to electricity, with the highest access in the coastal cities, such as Cotonou, and lower rates in medium urban centers where considerable proportions remain unconnected. Only 8.3 percent of the rural population has access to electricity.

Firewood is mainly lacking in the south, and a large proportion of wood for domestic energy is transported for distances of over 100 km in increasingly dry areas. The supply of wood energy to the urban and semi-urban areas is obtained from poor forest resource management practices (World Bank, 2004). The pressure is triggered due to underlying causes including the lack of alternatives to fuelwood; price volatility of petrol and gas; low access to domestic gas in rural areas; the presence of charcoal makers in forests by communities; the low efficiency of itinerant furnaces and low efficient carbonization methods; and the design of charcoal taxes based on the finished product (charcoal bag versus the actual raw wood exploited) (World Bank, 2018a).



The majority of rural households in Benin still depend on fuelwood for energy supply. Photo by: Shutterstock.

## Timber

The uncontrolled logging is recorded higher in the PED and accounts for between 80 and 100 percent of the exploitation of forest products (Government of Benin, 2019b). Apart from the exploitation of state-owned teak plantations by ONAB, the logging of timber is essentially the work of licensed operators or clandestine farmers who use the services of artisanal sawyers and produce planks or squared logs directly on the cutting sites, without management plans and not complying with exploitation standards. Whether done illegally or legally, forest exploitation is oriented towards a certain number of overexploited species, about 10 of which are experiencing critical regeneration slowdown, see table 2 (World Bank, 2018a).

Table 2. Ten most endangered timber species for protection in Benin

Scientific names	Current names (French)	Current names (English)
<i>Pterocarpus erinaceus</i>	Vène	African barwood, African teak
<i>Milicia excelsa</i>	Iroko	Iroko
<i>Khaya senegalensis</i>	Acajou	Mahogany
<i>Khaya grandifoliola</i>	Acajou à larges feuilles	Broad-leaved mahogany
<i>Afzelia africana</i>	Doussié/Lingué	Afzelia, African oak
<i>Berlinia grandiflora</i>	Mélégba des galeries	Berlinia
<i>Ceiba pentandra</i>	Fromager/kapokier	kapok tree, silk cotton tree
<i>Antiaris toxicaria</i>	Ako	Antiaris, false iroko
<i>Isoberlinia doka</i>	Doka	Doka
<i>Danielia oliveri</i>	Arbre à vernis	West African copal tree

Source: World Bank, 2018a.

## Urban encroachment

A gradual increase of dwellings and farming settlements in forests has been observed followed by the development of infrastructure (boreholes, roads, electricity, and telephone cables). This urban pressure is partly due to the low capacity (technical, material, and financial) of the Forest Administration to demarcate and secure the limits of the GFs close to urban agglomerations, the noncompliance with town master plans of Municipalities adjacent to the GFs, and provision of lands to settlers by local elected representatives and traditional chiefs. While urbanization expands with increased population pressure, urban plans lack strategies to protect forests in the surrounding of cities (World Bank, 2018a).

## Hunting and poaching

Besides agricultural activities including livestock, hunting is one of the main causes or sources of uncontrolled fires in Benin. Forest degradation and loss of biodiversity caused by uncontrolled bushfires can be highly severe especially if late fires are induced in the middle or late dry season, triggering its intensity and difficulties in controlling them. In the Pendjari National Park late fires occur regularly by poachers or breeders without following recommended times for fire setting (Rueth, 2010). Although hunting responds to both cultural and/or religious purposes the illegal hunting or capturing of wildlife animals has become more common for commercial needs, due to the absence of ineffective and concrete operational measures, including surveillance by the Forest Administration. In the transboundary protected areas network WAP and the PNP, important threatened large mammal species include leopard, korrigum antelope, and spotted hyena according to the IUCN red list of endangered species. Other endangered endemic species as a result of hunting or destruction of their habitat include hippopotamus, warthogs, and a type of primates called *Colobus polykomos* (World Bank, 2018d). However, since 2017 the management of the Pendjari National Park has been improved since it was entrusted to African

Parks, which have implemented participative approaches including trainings and offering employment to the local communities the aim to reduce illegal hunting, uncontrolled bushfires and controlled grazing activities in the Park (African Parks, 2018).

### 3.2. Indirect drivers

#### Population growth and poverty trends

Poverty in Benin remains widespread due to a low GDP growth rate per capita of 2.2 percent in 2013–2015 (World Bank, 2019d). Its population totals 11.2 million, with a per capita income of just US\$830 in 2017. Although World Bank estimates show a decline in poverty from 61 to 50 percent, the absolute number of poor increased from 5 to 5.3 million on account of a high rate of population growth of 3.2 percent. Inequality is moderate with a Gini index of 48 in 2015 (World Bank 2018b). Most of the poor (65 percent) live in rural areas and are smallholders implementing subsistence agriculture. Higher poverty rates are found in the remote departments in the north with poverty incidence of 60 percent or higher. Likewise, some departments in the south have comparable poverty rates, for example, Couffo (57.5 percent). Nonetheless, the more heavily populated southern regions account for roughly half of the poor, despite their generally lower poverty rates; see figure 9. Lack of services such as water, electricity, sanitation, mobile phone, and social services including health and education also follows the poverty trend with less access of such services in the north (Nguyen and Dizon, 2017). In 2014, youth (15–29 years old) unemployment rate was at 14.3 percent and the percentage of youth in the informal sector was 89.6 percent (World Bank, 2019d).

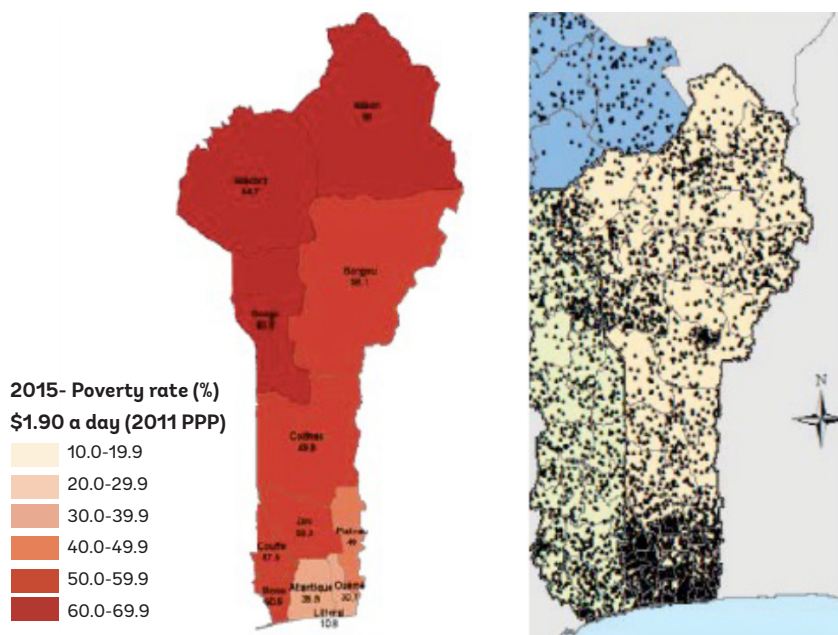


Figure 9. Left: Geographic distribution of poverty rate (percentage). Right: Poverty density and access to services in Benin, 1 dot = 200 people. Source: Nguyen and Dizon, 2017.

#### Forest Governance

Poor governance of the forestry sector is at the root of many of underlying causes of deforestation and forest degradation. This is evidenced by the non-enforcement or ineffective implementation on the ground of forest laws, policies, forest management plans, and protected areas. Law 93-009 of 2 July 1993 governing forests is outdated and will give way to the new Forestry Code, the drafting process of which is at an advanced stage. The same applies to the forestry policy revised in 2019 with the support of the EU. In addition, there is a lack of operational directives and guidelines for the implementation of forest

management plans. The plans are partial and discontinuous, lacking involvement and number of technical personnel, financing, and modern monitoring systems to be properly implemented. Within the DGEFC there are currently 588 staff, with one forest agent covering 25,300 ha (DGEFC, 2017). The Forestry Administration similarly faces reduction of its personnel, aging personnel, and the reduction of budget allocations. There is also absence of synergies in forest research systems in relation to forest resources conservation and development needs and the lack of a permanent forest monitoring system, and low level of good practices for the sustainable management of forest resources<sup>6</sup> (Government of Benin, 2019b).

At the local level challenges in co-management have also been observed. Forest officers were previously trained in participatory co-management approach including the sharing of roles and responsibilities between the State and riparian communities. Riparian communities organized in co-management associations (with representation from village communities) took an active part in the development of GF management plans and a benefit sharing mechanism resulting from sustainable forest management was established, between the co-management associations and the State. However, some co-management associations did not manage to operate effectively due to the lack of funds to hold regular meetings and the lack of a reliable accounting system, thereby preventing them from contributing efficiently to the protection of forests. The direct participation of village communities was also limited as co-management activities were centralized at the level of the umbrella association. A self-financing mechanism to sustainably support the operating costs of co-management associations was not established, which affected their regular participation in GF management (World Bank, 2018a).

There is a lack of harmonization with the central government and other sectors to bring synergies and work toward reducing deforestation. There is no multisector and multistakeholder consultation framework (forests, agriculture, livestock, land, urban, and energy departments) allowing the necessary synergies between forest management actors for the planning and sustainable management of forest resources. The growth for sustainable development program 2018–2021 by the Ministry of Economy and Finance and the Ministry of State, Planning, and Development does mention the need for sustainable management of forests in Benin and combatting of desertification (Government of Benin, 2018b). Benin's PAG neither addresses explicitly the concern of forest conservation or development of the forest sector nor is it embedded in other priorities such as urbanization, agriculture, and environment. On the other hand, the Strategic Plan for Agricultural Sector Development mentions the problem of expansion of agriculture areas at the cost of deforestation as an environmental impact and thus the need to promote agriculture intensification. Likewise, the National Policy of Energy mentions the high demand on energy leading to a high consumption of fuelwood at the cost of deforestation. In these, strategies could be harmonized on domestic energy for cooking and agriculture and conservation of forests to bring synergies.

**A Forest Governance Assessment organized by the Government of Benin and the World Bank under the Benin Classified Forests Project took place in 2019.** The aim was to assess the quality of forest governance in the country, through a stakeholder-led process. Participants discussed 65 indicators related to forest governance and ranked according to its importance to improve substantially the quality of governance in the sector. The top five included: 1. effectiveness of forest crime prevention measures and tools; 2. alignment/coherence of land use plans with forest policy priorities and goals; 3. adequacy of staff capacity and efficiency of agencies responsible for forest administration; 4. capacity and will of the judiciary and law enforcement agencies to deal effectively with forest offenses; and, 5. existence and quality of policies, laws and regulatory texts that govern the use and management of forests. Next steps include the drafting of an action plan emerging from the actions and recommendations of the workshop. See Annex 6 for more details and results of the workshop.

<sup>6</sup> Good practices identified included pest management, forestry statistics, wood processing technology, management of wildlife and forest mapping. Source: Forestry Administration restitution workshop for the Country Forest Note held on October 14, 2019.



## Land rights and tenure

The absence of documentation for land use has given rise to conflicts over land possession and inheritance and altercations between villages, farmers and pastoralists. Land tenure security is weaker in higher-valued agricultural areas, particularly the country's cotton producing zones (see figure 10) (Nguyen and Dizon, 2017). Other visibly adverse effects toward forest conservation stemming from land tenure issues are the deforestation of shea plantations by communities who consider themselves rightful owners of the lands where the trees are found. Communities have also established cashew plantations as a strategy to occupy land. In the CED there are issues with communities living adjacent to the forests who view themselves as rightful owners of the land including selling portions of forest reserves to private individuals.

A major underlying factor is that the vast majority of the land has not been officially recognized and titled, complicating enforcement efforts for the Beninese Government. Registered landowners represent less than 10 percent in the rural domain, which leaves large swathes of the country without formal demarcation. As of 2010, less than one percent of Benin's forests were formally titled to either individuals, local communities/ethnic groups, and/or companies (FAO, 2014). There is mistrust between local populations and government authorities, with the former oftentimes fearful that the Government might expropriate their land. This stems from collective memory of the history of the establishment of the GFs, which led many traditional communities to lose inalienability of traditional land tenure. In some communities, the fear of losing claim of the land to municipalities still lingers.

Yet, there is significant room for improving the situation. Many Beninese cultures have high reverence for forests, as characterized by the many sacred groves that dot the country. Also, recent political reforms in decentralization and increased security tenure are being used to promote greater decision making at the local levels and strengthen the ability of individuals and communities to invest in the sustainable use of their natural resources, including forests.

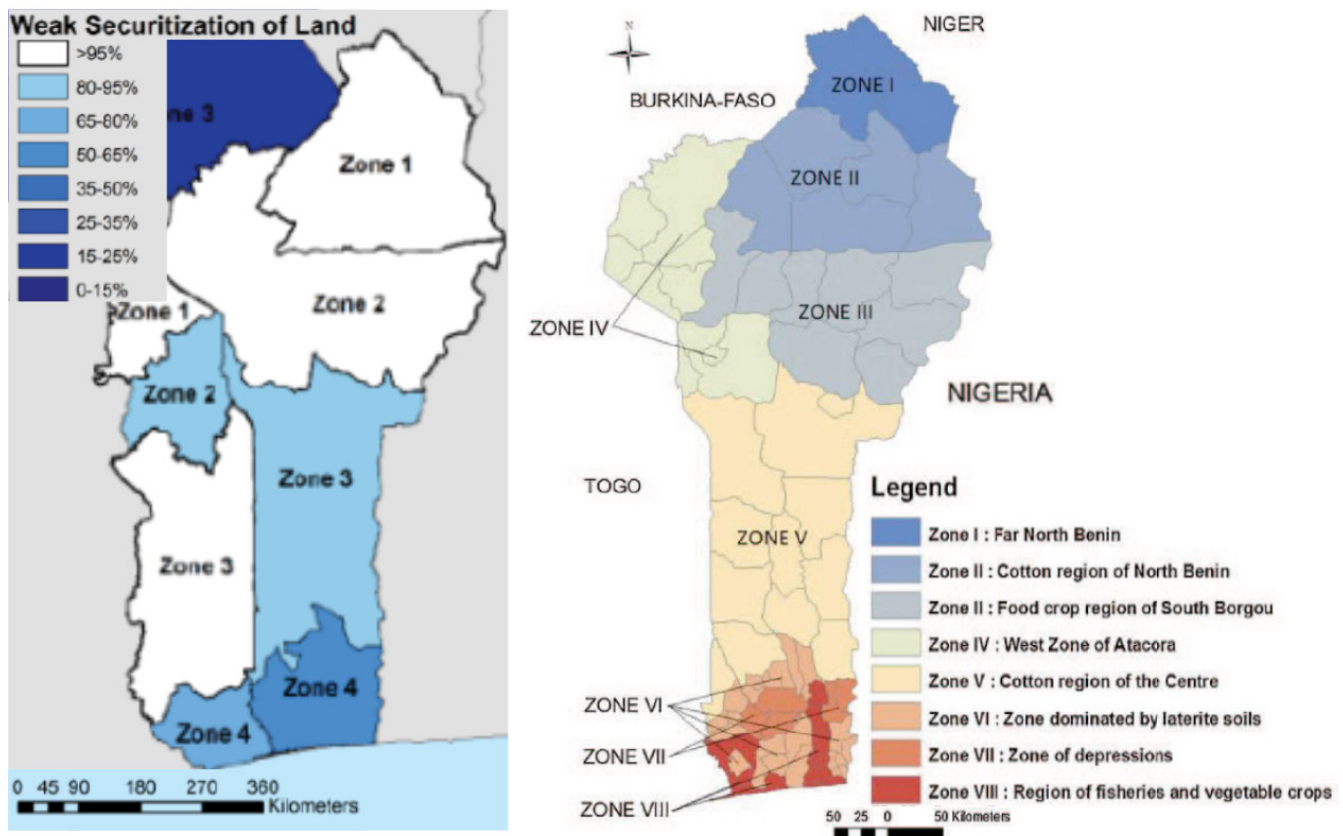


Figure 10. Left: Among those who own some land, there is better securitization of ownership in Zone 4, where 76 percent of individuals own at least one plot. In remaining zones, fewer than 60 percent own at least one plot. Right: Agroecological zones in Benin. Source: Nguyen and Dizon, 2017.

## Fiscal and revenue challenges for forest management

**In general, the low levels of fiscal revenue mobilization have undermined sustainable economic development in Benin.** Tax revenue as a percentage of GDP has remained between 15 and 16 percent over the past five years, which is lower than 20 percent standard set by West African Economic and Monetary Union (WAEMU). The tax performance in Benin is affected by the discretionary powers of the Government, including exemptions and the use of negotiated values instead of actual values, and by the incompleteness of the Taxpayer Identification Number (TIN) database (World Bank, 2017).

Taxes for exploitation, import, and export of forest products are collected according to the categories of species or products and paid to the public treasury following Law 2019-46 of December 27, 2019. Whereas taxes for NTFPs were recently adopted in the law. Tax rates of the volume-based permis de coupe<sup>7</sup> (in CFAF per m<sup>3</sup>) and will depend on the species, height, and its management system (controlled-under forest management plans, oriented- under simple management plans or uncontrolled). Rates are fixed by a table and tend to be lower for taller trees and if harvested under management plans.

Taxes and royalties collected by the public treasury are distributed to municipalities and villages according to the Decree on modalities on collection and distribution of taxes and royalties of forest products (N°036/MEPN/MEF/DC/SGM/DGFRN/SA). Further, according to the law of finance, a share of taxes collected from forest products shall also be allocated to the FNDF to constitute the fund.

The uncontrolled exploitation of forests and forest products is accompanied by a significant tax evasion and the need to expand the forest tax base. There is a weak implementation of the current forest policy and tax collection is not efficient. In addition, the number of forest products for which taxes are collected is limited. There are also challenges in outdated fiscal system in fuelwood production. Charcoal producers pay tax per bag of charcoal sold without the tree being sold to them, thus addressing the need to update the forest fiscal system (Government of Benin, 2019b).

**Fiscal policies largely focus on the extent of improving the agriculture sector.** As stated in the law of finance 2018, strategic directions include strengthening of the agriculture sector including agricultural research for the provision of quality seeds and the production of base and pre-base seeds, strengthening of the private sector to upscale and marketing of seeds through specialized operators, and oversight and regulatory functions related to seed certification and approval of specialized operators.

## Forest financing and challenges for the sector

**Financing in relation to the DGEFC is insufficient and irregular.** In the forestry sector, financing is mainly provided by external resources through projects or programs of short duration. Over the past decade, 2010–2019, the Beninese State has allocated roughly CFAF 26 billion to the forestry sector. Complementing the Government's contribution are external resources—from donors such as the World Bank, the African Development Bank, German Agency for International Cooperation (GIZ: *Deutsche Gesellschaft für Internationale Zusammenarbeit*), and others—whose combined support was CFAF 53.5 billion over the same period. Support to the forestry sector is thus characterized by a split of about one-third from the national budget and two-thirds from outside financing. Over the decade, the total budget has remained fairly steady, staying within a band of CFAF 6–10 billion per year.

**In 2019, Benin gave more budget allocation to its forestry sector than external donors.** While as mentioned earlier, foreign assistance has outweighed domestic contributions, recent trends have shown, for the first time during the decade, an increasing proportion of the forestry sector financed from the national treasury over time. Nevertheless, the Government's mobilization of the forest sector operations has been decreasing over time. Disbursement challenges are most glaring in donor-funded projects, with low rates of execution, both in the parts funded by external sources and those funded through Benin's contribution. That the sector is not able to disburse quickly enough during any given year may indicate a systemic issue with the absorptive capacity of the various agencies involved in implementing the projects.

<sup>7</sup>State forests may be exploited by private enterprises on the basis of administratively allocated harvesting licenses (permis de coupe), auctioned forest lots (vente de coupe), or by the State itself.

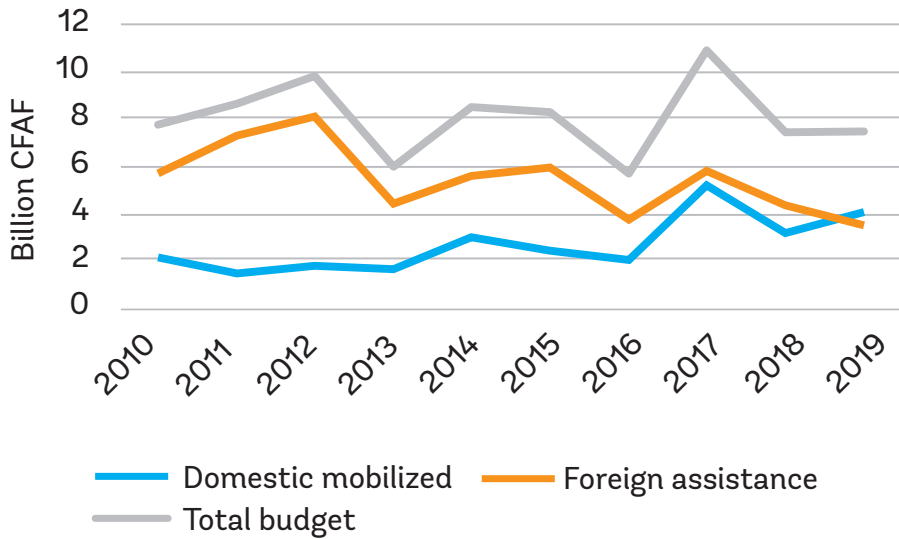


Figure 11a: Forestry resources mobilized for forestry sector since the last 10 years. Source: DGEFC, 2019

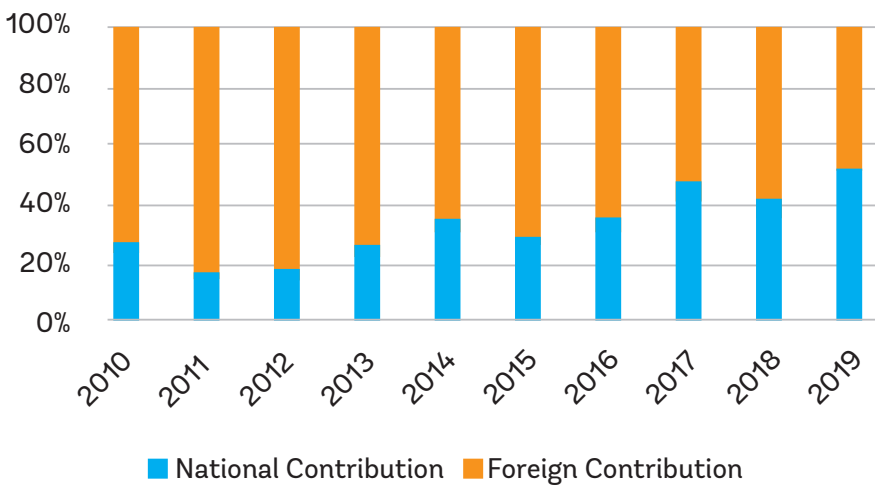


Figure 11b: Budget allocated to the forestry sector since the last 10 years. Source: DGEFC, 2019.

**Within the forest sector’s parent ministry, the forests, water, and hunting program takes up the second-lowest share of resources, just ahead of budget for administrative support.** The forestry budget is significantly smaller than budget for the agriculture and energy sectors. However, compared to other institutions dealing in management of natural resources, the forestry sector receives a consistent amount that is larger than other sectors with similar levels of contribution to national economic production. For example, government budgetary allocation to the forest sector is over double than that of the livestock sector and has been around five times the amount provided to fisheries. To complement State resourcing, several of the forestry institutions are autonomous. The most salient example is ONAB, which depends on the State only for salaries of its personnel. Consistently, almost all of its budget has originated in its own revenue stream.

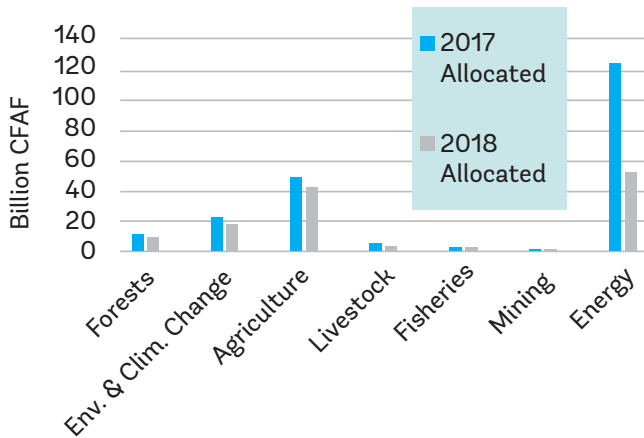


Figure 12a: Allocated budgets to different sectors in 2017 and 2018. Source: MEF, 2019.

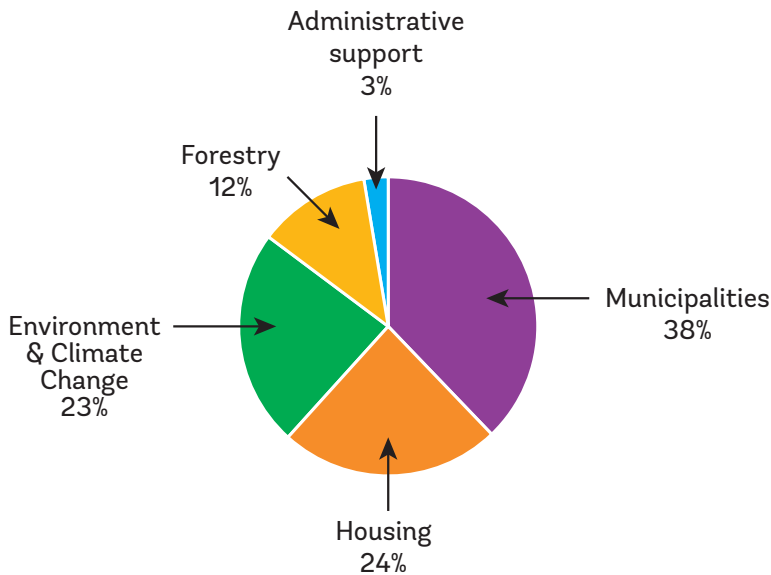


Figure 12b: Budget allocations under the MCVDD in 2018. Source: MEF, 2019.

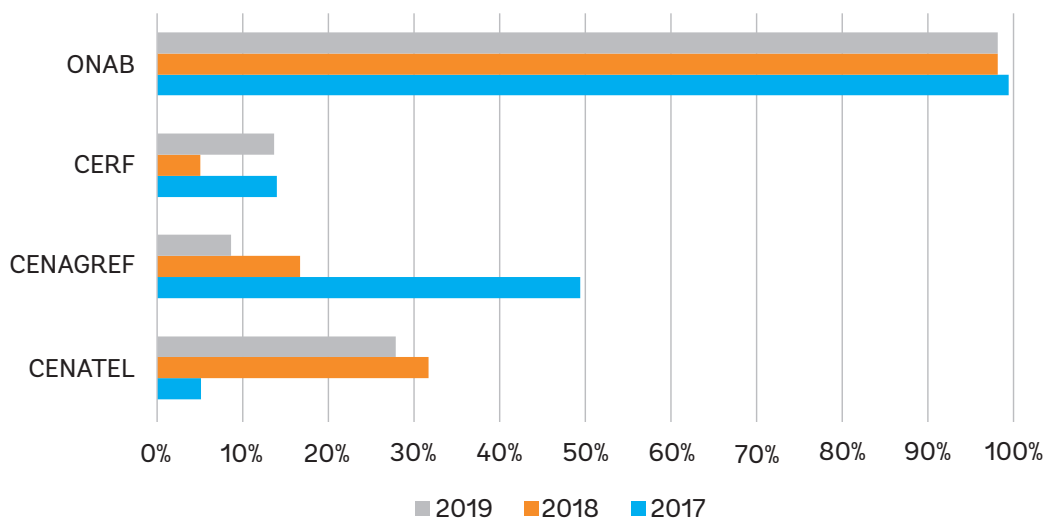


Figure 13. Percentage of total budget of different forestry institutions mobilized through own funding. Source: DGEFC, 2019.

**The Government's Strategic Plan 2018–2022 presents 14 development partners which contribute directly or indirectly toward the sustainable management of forests.** These include the African Development Bank, EU, United Nations Development Programme (UNDP), International Development Association (IDA) - World Bank Group, Global Environment Facility (GEF), FAO, GIZ, *Kreditanstalt für Wiederaufbau (KfW)* Group, European Development Fund, United Nations Environmental Programme, Belgian Technical Cooperation (BTC), German Technical Cooperation, and Japan International Cooperation Agency (JICA). The forestry sector has benefitted from at least CFAF 53 billion from development partners over a period of 10 years. The most recent projects being implemented, dedicated allocations, and development partners are listed in table 3.

Table 3. Selected forestry projects implemented in Benin between 2010 and 2019.

Project title	Period	Funding source	Budget (CFAF)
Additional Financing for the Forests and Adjacent Lands Management (FALM)	2014-2018	GEF, IDA	8.28 billion
Programme of Intensive Reforestation of the National Territory through Incentives (PRI)	2016-2026	National	43 billion
Community forest management support project – Phase II (PAGEFCOM II)	2017-2021	AfdDB, GEF National	6.9 billion
Support Project for Preservation and Development of Forests Galleries and Production of Digital Basic Mapping (PAPDFGC)	2012-2018	EU, UNDP National	5.7 billion
Mono Delta Transboundary Biosphere Reserve Project (PRBTDM)	2013-2019	GIZ, National	5.4 billion
Wood Energy for Gas Substitution Project (PSBE-GAZ)	2016-2021	National	400 million
Ten Million Souls Ten Million Trees Project (P10MAA)	2013-2016	National	3.3 billion
Support to the Protected Areas Management Project (PAGAP)	2011-2017	IDA, National GEF, KfW	4.6 billion
Incorporation of Sacred Forests into the Protected Areas System of Benin (PIFSAP)	2011-2014	GEF, UNDP, National	1.2 billion
Project to Support Parcs of Entente (PAPE)	2013-2016	EU, National	980 million
Forest Sector Capacity Building Support Project (PARCS Ex PEDGFRRN)	2012-2016	National	4 billion
Agoua, Monts Kouffè and Wari-Marro Forest Massifs Development Project (PAMF)	2002-2008	AfDB, BADEA, National	5.38 million
Special Programme for Reforestation and Restoration of Degraded Land (PSRRT)	2007-2014	National	4 billion
Support Project for the Promotion and Valorisation of Non-Timber Forest Products (PA-PFNL)	2012-2014	FAO, National	307 million
Support Project for the Implementation of the National Programme for the Sustainable Management of Natural Resources (PA-PNGDRN)	2010-2014	National	250 million
Natural Resources Conservation and Management Program (ProCGRN)	2004-2014	GIZ, National	4.2 billion

Source: DGEFC, 2019.

In 2013, the West African Savannahs Foundation (FSOA), a conservation trust fund, was established through the Support to Protected Areas Management Project of the World Bank to administer fiduciary funds for costs in conservation, management, and investment of the PNP and PNW. FSOA’s financial resources come mainly from interest generated by capital or equity investments deposited in banks. The foundation also manages project funds of EUR 10 million granted by the KfW to support the North Benin Sustainable Reserves Management Project.

The FNDF was established by Decree No. 2016-014 of 30 January 2016 to mobilize financing from domestic and international sources for forestry development. Allocated funds are directed mainly to develop operational and institutional capacity for national and local actors involved in forest management, promote sustainable management of natural resources and research, and support programs and projects related to conservation and good environmental stewardship for the benefit of local populations. The fund aims to create a virtuous cycle by financing sustainable forestry development and reinvesting taxes and other revenues generated by sustainable forest enterprises back into the forestry sector. As such, the FNDF is designed for financial autonomy; the core of its revenue comes from taxes and royalties from logging, contributions from members of the commercial forestry sector, and profits from state-owned plantations, as well as from fines for unauthorized/illegal (and degradation-inducing) forest use (figure 14). However, to date the FNDF has been unable to finance the forestry sector as the conditions for effectiveness are not yet in place.

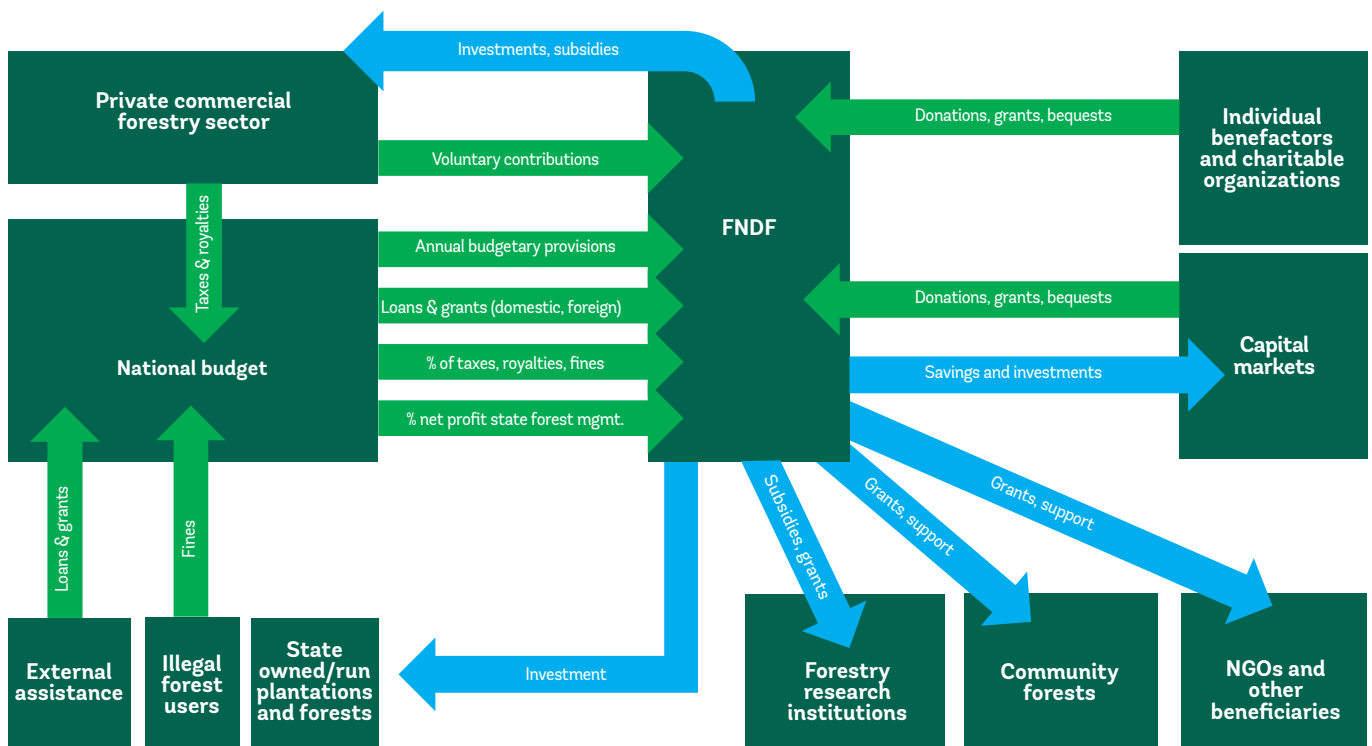


Figure 14. FNDF flow of funds chart

## Climate change

**An increased variability in the seasonal climatic regime along with lack of early warning systems will impact and exacerbate forests, agricultural and water resources sectors' vulnerabilities, threatening food security and the populations' main livelihood.** Benin is ranked 149 out of 188 countries in per capita of greenhouse gas (GHG) emissions and contributes only 0.03 percent to global emissions (WRI, 2017). On the other hand, Benin is highly vulnerable to climate change,<sup>7</sup> ranking 155 out of 181 countries in the ND-GAIN<sup>8</sup> index for climate vulnerability (ND-GAIN, 2017).

The most frequent and severe climate risks are drought, late and intensive rains and floods. Droughts and floods have intensified during the same period with rains of 100 mm per hour enhancing soil erosion. The coastal, northwestern, and far northern zones of Benin are considered to be particularly vulnerable to the impacts of climate change (World Bank, 2019b). Large numbers of the poor population are settled in coastal and urban areas and are severely affected by coastal erosion and flooding which damage productive land and infrastructure.

If no adaptative measures are taken, it is estimated that food production may be reduced by 6 percent by 2025. The expected decrease of rainfall in the north will lead to a decline in crop yields and productivity of fish stocks. The decline of precipitation could also result in 40 to 60 percent reduction in the availability of water resources, further influencing Benin's food production (Climate Service Center, 2013).

The forestry sector was highlighted in Benin's NDC as vulnerable but emphasized as a viable resilience measure if managed sustainably (Government of Benin, 2017f). Deforestation and forest degradation caused by charcoal production, non-sustainable timber extraction, and slash and burn agriculture lead to increased vulnerability not only for forest-dependent communities but also in downstream regions, impacted by devastating floods during the rainy season (Ministry of Foreign Affairs of the Netherlands, 2018). When it comes to coastal erosion, the most aggravated impacts of the whole Gulf of Guinea are felt in Benin; recording one of the highest rates of coastal erosion, where the coastline retreats up to 12 to 30 m per year at the most critical points (Government of Benin, 2019a).

<sup>8</sup> Climate models project a mean annual temperature increase by 1.05°C to 3.0°C by the 2060s and 1.5°C to 5.1°C by the 2090s (Jalloh et al., 2013). Sea level is also expected to rise by 0.4 to 0.7 m by 2100 (World Bank, 2019a).

<sup>9</sup> GAIN Index measures a country's vulnerability toward climate change, including other global challenges. It also measures readiness to improve resilience; higher scores are better.



# Opportunities for economic growth through forest-smart interventions



## 4. Opportunities for economic growth through forest-smart interventions

With the aim of achieving sustainable forest management while simultaneously contributing to the national economy and poverty reduction, strategic actions are required both in the PED and CED to address the identified challenges considered as major bottlenecks for sustainable forest management and development. The Government of Benin, through the updated forest policy, provides a number of recommendations to address the main challenges. The main conditions of success are political will at the highest level of state (the MCVDD and DGEFC), the introduction of a new forestry tax system, the new Forest Code in preparation, and a strong involvement of partnership with communities which represent key agents of change.

Key opportunities for forest-smart development, as further described in this section, fall under categories of strengthening the forestry sector; enhancing financing opportunities including strengthening matching grants with forest-dependent communities; at the government level promoting synergistic policies to halt deforestation involving key sectors such as agriculture and energy; and promoting an enabling environment with inclusion of the private sector for sustainable development of key value chains in timber, fuelwood, NTFPs; and agriculture. Forests are key for regulating climate, contributing through carbon sequestration and resilience building. Thus, opportunities for forest-smart development should be promoted with a climate adaptation and mitigation lens and should provide safety nets for local communities, especially for the most vulnerable.

The economic activities based on the exploitation of forests, as long as they are organized to preserve the resource and its renewal in a sustainable manner, constitute a key factor for the conservation and development of forests. The potential to meet the standards of sustainable management of forest resources while offering higher added value and increasing their contribution to the national economy was identified from the analysis of four main subsectors: agroforestry, fuelwood, timber and NTFPs.

### Opportunity 1. Strengthen the forestry sector

**Strengthen forest monitoring through the implementation of a control system of forest resources at the local level.** New control systems for villages and communities to address illegal logging could be established through development of rural markets limited to a follow-up and a post control of the local management structures. This would involve installation of checkpoints at the entrance to main cities involving forest agents and public treasury collection responsible for collecting taxes and fees or penalties for uncontrolled exploitation (Government of Benin, 2019b).

Other investment priorities include conservation and restoration measures for the 10 most endangered timber species; development and implementation of forest management plans based on updated inventories for sustainable exploitation in natural forests; maintenance of existing through co-management approaches; strengthening the control and supervision of plantations by the Forest Administration, capacity building of stakeholders for proper technical management of their plantations; and reforming or strengthening of the FNDF (World Bank, 2018a).

**Expand and develop rural markets in the most important areas of uncontrolled exploitation, most importantly for charcoal, and improve tax collection system.** The new forest policy aims to set up at least 25 rural markets officially approved with simplified forest management plans based on capacity and quota. The establishment of rural markets supports an operational mechanism for the collection and sharing of taxes and fees. A total of CFAF 390 million (US\$658,000) in revenues was collected from rural markets between 2015 and 2017, which was distributed among the State, municipalities, and grassroot populations. Further, the tax base could be broaden adopting a similar model for artisanal timber and NTFP sector (World Bank, 2018a).

**Continue to build capacity of local forest co-management structures.** In the GF of Tchaourou-Toui-Kilibo, the communities and forest authorities have made significant strides in organizing local forest co-management structures. The various structures work hand in hand with the Forestry Administration and have exemplified what the participatory forest management approach can look like. Understanding the community forest governance is an iterative process based on building human capital over time; financial and technical assistance to such structures provides a significant long-term investment for the future management of Benin's forests.

**Increase support to community forests.** Decentralization and privatization of forested lands can contribute to improving sustainable resource use, including forest monitoring and prevention of overexploitation, by giving communities a more direct hand in managing lands that many of them believe belong to them rightfully. In addition, improved recording of data and record keeping related to forested lands, their size and extent, the flora and fauna they contain, and their ownership (under customary and, if applicable, modern law) will help individuals, municipalities, and forest authorities in evidence-based decision making.

## Opportunity 2. Promote synergistic approaches for forest-smart development

**Strengthen the harmonization of agriculture and forestry policies to minimize trade-offs with forest and biodiversity.** For example, agriculture policies could provide support for intensification in already cleared lands, with conditional support to farmers who utilize sustainable practices and inputs and comply with zoning regulations. This would help disincentivize clearing of new lands for agriculture and help direct resources toward restoring previously degraded lands.

**Support integrated landscape management approaches for reducing deforestation and rehabilitation of degraded lands.** As mentioned in the National Strategic Development Plan for the Agricultural Sector 2025 agro-silvo-pastoral systems including the development of its management plans are important to support agriculture intensification systems (Government of Benin, 2017b). Silvo-pastoral systems are agroforestry arrangements that introduce fodder plants (e.g. grasses and leguminous herbs) with shrubs and trees for animal nutrition and complementary uses. The systems allow the intensification of cattle production based on natural processes and are recognized as an integrated approach to sustainable land use. Silvo-pastoral systems promote increased yield per unit area, improved resource use efficiency and enhanced provision of ecosystem services (Chará et al., 2019), and have been practiced in Latin America and in several areas of Africa and Asia. In Costa Rica, a livestock intensive country, reforestation programs were developed for highly degraded pasture lands. It pioneered in livestock sector reforms with the use of silvo-pastoral and improved pasture technologies which led to improved productivity, ecosystem restoration, tree cover enhancement and contributing to reduced greenhouse gas emissions. Government incentives were used to rehabilitate degraded pastures, intensify pastures in reclaimed lands and implement silvo-pastoral technologies. The silvo-pastoral systems demonstrated a practical way to intensify cattle production while retaining and enhancing tree cover in pasturelands. Innovative partnerships built between government agencies, academia, and farmer organizations also helped to drive innovation in the country (Nepstad et al., 2018).

**Promote agroforestry practices to reduce deforestation and forest degradation.** The country aims to expand agroforestry in selected GFs which are highly and/or moderately degraded due to agriculture encroachment. At national level, the long-term objective is to reduce agricultural areas from 20 to 10 percent in the GFs. Farmers that are scattered in the GFs will be supported to adopt agroforestry techniques in specific zones dedicated to agriculture (World Bank, 2018a). The introduction of selected tree species in agricultural plots has proven to help restore and improve soil health and subsequently improve agricultural yields. In Ivory Coast the high valued tree species Teak and Acacia established in maize production helped to diversify income of smallholders and to compensate for low harvests (Ricaud, 2014). The insertion of fruit trees can also support food security and build resilience by generating alternative incomes for farmers.

Priority investments defined in close collaboration between the Agriculture and Forestry Department in performance-based agroforestry projects supports platform building and collaboration between the two sectors. As an example, the Forestry Department supplies local species of forest seedlings to farmers, and the Department of Agriculture provides technical assistance on improved agriculture intensification techniques. This is currently being implemented in the World Bank's Gazetted Forests Management Project, offering an opportunity to be upscaled nationwide. As stated in the World Bank's Assessment of Gazetted Forests in Benin (2018), performance-based payments would include contracts to communities that define detailed provisions and actions in number of trees to be planted and management standards to trigger payments.

**Promote agroforestry practices with shea trees for restoration of degraded lands.** The establishment of shea plantations through agroforestry parklands can be a viable option for land restoration. The replanting of shea with other indigenous trees can be a part of climate-smart agroforestry programs that can increase both annual tree and crop productivity. With involvement of the government, production licenses and agribusiness loans could be offered upon tree planting for shea and other indigenous tree species (Nepstad et al., 2018).

**Enhance collaboration with the energy sector and promote the expansion of fuelwood plantations as a short-term solution to meet energy demands.** To reduce dependency on forests for energy supply, the Government of Benin is committed to providing subsidies to the population for the use of gas for cooking instead of wood energy. However, in the short to medium run, the dependency on fuelwood remains as a real environmental challenge projected to increase over time as population rapidly grows. In addition to the creation of new plantations especially in areas of high charcoal production, the priority interventions are to strengthen the control and supervision of the forest administration on fuelwood production (before and after cuts), the restructuring of the existing rural based markets and creation of new ones, training of charcoal producers in improved carbonization techniques, the introduction of higher performance furnaces and improved cookstoves, proper implementation of management plans to ensure sustainable harvest in natural forests, and the development of an effective incentive-based tax system (World Bank, 2018a). Some of these interventions are currently being implemented in the World Bank's Gazetted Forests Management Project, offering an opportunity to be upscaled.



Shea parkland provides potential economic benefits in Benin, including restoration of degraded lands. Source: Shutterstock.

### Box 1. Success story: 16 GFs reached their maximum potential for wood and charcoal production

A total of 16 GFs reached the maximum potential for wood energy production (firewood and charcoal). Their surfaces range from 347 ha (Boko) to more than 68,000 ha (Agoua). Five of them are already organized and formally exploited for the production of wood energy in a sustainable manner. The remaining 11 are informally exploited to respond to the urban demand for charcoal. Three main criteria were used to prioritize these 16 GFs regarding the wood energy production opportunity: (a) surface of non-forest area (soil availability), (b) percentage of deforestation (threat), and (c) proximity to a major city (demand). Based on these criteria, the GFs of Kétou, Ouémé-Boukou, Agoua, Toui-Kilibo, and Dan present a higher potential for the development of wood energy, subject to more in-depth feasibility analyses (World Bank, 2018a).

**Promote nature-based tourism and strengthen the protected areas.** Benin's tourism policy for 2013–2025 aims to increase tourism by upgrading sites, improve tourism-related infrastructure, build skills for higher quality of services, increase promotion and marketing, and develop ecotourism. Should the security situation improve in the future, financing SMEs along the tourism value chains, enabling conditions for private sector investments, including diagnostics, and exploring guarantees for any foreign investments in the tourism sector would create a win-win situation for strengthening the management of protected areas and promote nature-based tourism (World Bank, 2018a).

Strengthening protected areas and reducing illegal bushfires set up by hunters through a bottom-up approach is key to enhance preservation of closed-canopy forests. In the W National Park the involvement of local communities in fire and grazing management has proven give effective results and enhance preservation of the park (Prudent, 2008). Studies from the WNP and Marahoue National Park in Ivory Coast showed how improvement in fire control, strengthened law enforcement, and forest restoration (in degraded areas using, for example, cashew trees) helped increase forest cover (Inoussa et al., 2011; N'Da et al., 2008). These practices set a good example to be further replicated including a strengthened local governance and the involvement of local population in the management of protected areas, with the aim to reverse deforestation and degradation trends in savanna forest ecosystems (PACO/IUCN, 2012).



Pendjari National Park. Photo: Manuela Ravina da Silva

### Opportunity 3. Promote enabling environment and attract the private sector for sustainable activities

**Create an enabling environment for sustainable investments in timber production.** Priority investments in timber plantations should focus on fast-growing tree species based on a delegation or co-management approach through either ONAB, whereby roles and responsibilities between ONAB and the Forestry Administration could be clarified through i) the revision in their contractual agreements and establish a benefit sharing mechanism from the sales of timber, or ii) development of concessions to private operators or contractual agreements with local associations. Also, because of the high demand for timber at domestic and international level, interventions should be developed to attract national investors for second-level wood processing and the improvement of wood processing technology (World Bank, 2018a). Should certification timber process be introduced in the future, Benin could increase its profits in the timber value chain by expanding its market opportunities to Europe. Prior to this to be achieved, there is need to improve the management system in order to receive the certification. Traceability systems have been initiated to help track illegal actions in the numbering, transport and marketing of state timber with the support EU-FAO FLEGT Programme to ONAB (FAO, 2016).

**Strengthen the production of high value-added NTFPs.** The World Bank's Gazetted Forests Assessment analyzed nine classified forests' potential to further support investments in NTFPs (Ouémé Supérieur, Wari Maro, Monts Kouffé, Alibori supérieur, Ouénou-Bénou, Kouandé Mékrou, Pénésoulou, Bassila, and Trois Rivières). It concluded that there is need to improve knowledge and economic assessments (including wild mushroom for its nutritional content and importance in helping regenerate forest cover) and the potential demand including certification and marketing aspects. The development of selected NTFPs could also be supported by subprojects of income-generating activities including technical and organizational assistance, infrastructure and equipment, and low-interest loans or subsidies (matching grants). This is currently being promoted through the Benin Gazetted Forests Management Project particularly for shea and honey value chains. Support for the development of the mushroom value chain would also have a significant impact on the incomes of rural women and youth, mainly involved in harvesting and processing of mushrooms. As an indication, it was calculated that such support in five GFs would lead to an annual harvest from 2 to 5 tons per GF and generate a turnover of about CFAF 125 million, providing around 8,400 jobs (World Bank, 2018a).

**Support an enabling environment for the development of certified shea butter.** Opting for the development of certified production implies a range of standards and procedures that contribute to the reduction of deforestation and forest degradation. To achieve 'organic' labeling in shea production, the introduction of shea parklands and nut collection process would be sustainable, improving its transformation process towards more energy-efficient and sustainable practices. For 'fair trade' certification, social standards are added and producers are paid a price premium on top of the selling price. The value chain sector should be developed in a favorable business environment and benefitting from supportive policies. In addition, the development of agroforestry systems with shea trees has the potential to diversify income-generating activities (Venturini et al., 2016)

### Opportunity 4: Develop monitoring, reporting, and verification (MRV) systems, building resilience toward climate change and opportunities for carbon markets

**Strengthen forest monitoring and forest data, which is essential to support the reduction of deforestation and forest degradation.** The different governance entities in charge of forest management in Benin should be accompanied with a coherent information system generating and collecting key data and statistics essential to properly monitor deforestation and forest degradation, including statistics in forest productivity, and assess forests' impact on the national economy. Currently, information is scattered or not easily available, which in turn makes it more difficult to provide key evidence for planning

and providing tangible policies and strategies. In addition, the challenge remains when it comes to quantifying forest degradation and properly assessing deforestation. A strengthened monitoring system would also help Benin in creating opportunities to join carbon markets and obtain carbon credits in the forestry sector, either through Reducing Emissions from Deforestation and Degradation (REDD+) or other viable carbon credit mechanisms. In relation to this, restoration of riparian forest ecosystems that can be valued may also be eligible for carbon credit accounting, creating opportunities for mangrove restoration.

**Build resilience through ecosystem restoration in coastal areas.** Protecting the coastal zone from erosion and restoring fragile coastal ecosystems are major objectives of Benin's NDC. Building Benin's resilience in the face of climate change will require addressing challenges across different sectors, including agricultural production technology, coastal erosion, forest management/preservation, water management, and rehabilitation of riparian and mangrove forests. Coordination and multisector interventions across national borders are required in order to address impacts and risks of climate change. Investments directed towards incorporating climate development planning and ecosystem restoration, rehabilitation and reforestation of mangroves and coastal forests are being implemented through the World Bank's West Africa Coastal Areas Resilience Investment Project in Benin.

**Restoring riparian forests such as mangroves can help build opportunities for future payment of ecosystem services.** Mangrove forests have proven to reduce impacts from storms by reducing the flow of water. As proven in other countries, coastal areas with extensive cover of mangrove forests suffer less damage and loss of lives than areas without mangrove forest cover. Apart from functioning as a key adaptive measure to address climate change, a meta-analysis estimated that mangroves' mean annual value of services are around US\$400 per ha (Brander et al., 2006). Mangrove forests also serve as carbon hotspots and represent opportunities for payment of ecosystem services. In relation to this, Benin would benefit from restoration of riparian forest ecosystems that can be valued and counted under voluntary blue carbon markets (World Bank and UNDESA, 2017).

In addition, there are upcoming opportunities for blue as well as green carbon market through the Paris Agreement. Article 6 of the Paris Agreement lays out different market- and non-market-based mechanisms for countries to foster quick and efficient emission reductions. Article 6.2 provides Benin the opportunity to voluntarily engage in a decentralized form of cooperation, whereby parties can implement collaborative market mechanisms and transfer Internationally Transferred Mitigation Outcomes (ITMOs). Under Article 6.4, parties can also use a centralized crediting mechanism governed by a UNFCCC body and open to all (similar in several aspects to the Joint Implementation (JI) and the Clean Development Mechanism (CDM)). Article 6.8, in turn, establishes a framework for non-market cooperation approaches, which can entail the provision of finance where mitigation benefits are retained in full by the host country (Herr et al., 2018).



**World Bank Group  
engagement:  
Proposed approach in  
the country**



## 5. World Bank Group engagement: Proposed approach in the country

The World Bank's added value organized in the areas of investments, analytical work, and technical assistance is visible through its incrementing World Bank portfolio for forest-smart interventions. These align with the World Bank Group's Forest Action Plan FY16–20, the World Bank's Climate Change Action Plan (2016–2020), Benin's Systematic Country Diagnostic (SCD) (2017), and Benin's Country Partnership Framework (CPF). Around US\$680 million is committed under the active lending and portfolio program contributing directly or indirectly to sustainable forest management; see annex 2 for a full list.

Aligned with government priorities, a list of potential areas of intervention are highlighted through a suggested programmatic approach and priorities in analytical work; capacity development and investment needs were identified to fill current missing gaps. The objective of the proposed programmatic engagement is to support the Government of Benin in further strengthening the forestry sector, through the enhancement of capacity in forest governance, technical assistance for improvement of forest monitoring, financing of forestry for economic growth, creation of jobs, supporting of livelihoods, and building of resilience toward climate change and climate change mitigation. The engagement's forest-smart operations takes place with cross-sectoral interventions including the energy, urban, and agriculture sectors, which affect forest development, supporting strategies that seek synergies and minimize trade-offs between the interacting land uses. Addressing the barriers in these sectors will help build opportunities to further enhance the economic and sustainable development for forests and forest landscapes in Benin. Table 4 outlines investments, technical assistance, knowledge, and partnerships needed to move forward.



Table 4. World Bank Group's proposed programmatic approach to attain forest-smart development in Benin

Threats	World Bank projects (pipeline and active portfolio)	Gaps	World Bank instruments	Related Actions from Benin Forestry Policy
<b>Opportunity: Sustainable management of forest resources and biodiversity</b>				
<ul style="list-style-type: none"> <li>Agriculture tencroachment</li> <li>Transhumance</li> <li>Illegal logging</li> <li>Fuelwood dependence for energy</li> <li>Illegal hunting</li> <li>Lack of alternative income activities for livelihood.</li> </ul>	Gazetted Forests Management Project  Energy Service Improvement Project  Agricultural Productivity and Diversification Additional Financing  Agricultural Competitiveness and Export Diversification Project  Benin Cross Border Tourism and Competitiveness Project  West Africa Coastal Areas Resilience Investment Project	<ul style="list-style-type: none"> <li>Institutional and regulatory framework for co-management of reforestation activities.</li> <li>National system for the implementation of forest co-management.</li> <li>Multi-year program to restore degraded land in marginal areas including coastal areas.</li> <li>Assessment of forest resources for the Protected Estate Domain.</li> <li>Assessment of accurate deforestation and forest degradation.</li> </ul>	Investment project Financing including technical assistance  Development Project Financing  Advisory Services and Analytics  Trust Funds and grants	<ul style="list-style-type: none"> <li>Establish an institutional and regulatory framework for the co-management of reforestation activities.</li> <li>Update and implement planning and management tools for forests and plantations (natural forests, sacred forests, mangroves, wetlands, wildlife reserves, nature reserves, forest plantations.</li> <li>Develop and implement plans and tools to optimize the forest monitoring system.</li> <li>Identify and integrate sacred forests, mangroves and other related ecosystems into Benin's protected area system.</li> <li>Implement a multi-year programme to restore degraded land in marginal areas (north-west, Abomey Plateau,...)</li> <li>Carry out thematic mapping and GIS of all protected areas.</li> </ul>
<b>Opportunity: Establishment of forest plantations and support timber and fuelwood supply</b>				
<ul style="list-style-type: none"> <li>Weak support for development of the private sector.</li> <li>Limited access to markets</li> <li>Limited access to finance</li> <li>Weak processing industry</li> </ul>	Gazetted Forests Management Project  Energy Service Improvement Project  Agricultural Productivity and Diversification Additional Financing	<ul style="list-style-type: none"> <li>Assessing the contribution of the forest sector to the national economy.</li> <li>Private Sector Diagnostic for timber processing at national level.</li> <li>National database on forest resources and assess the consumption of forest products.</li> <li>Strengthen technical, material and organizational capacities of forest-based enterprises.</li> <li>Forest certification process initiated by ONAB.</li> <li>Research and development for autochthonal species of high economic value.</li> <li>Mobilizing private partnerships for the financing and development of the forestry sector.</li> </ul>	Investment project Financing including technical assistance  Advisory Services and Analytics  Private sector options: MIGA and IFC  Trust Funds and Grants	<ul style="list-style-type: none"> <li>Assessing the contribution of the forest sector to GDP.</li> <li>Developing a sustainable financing mechanism for forest management in Benin.</li> <li>Making the National Forest Development Fund operational.</li> <li>Update the national strategy for rural timber markets.</li> <li>Develop the strategy for mobilizing private partnerships for the financing and development of the forestry sector</li> <li>Manage a database on forest resources and regularly assess the consumption of forest and non-timber products</li> <li>Support the forest certification process initiated by ONAB</li> <li>Promote research and development in the field of silviculture for autochthonal species of high economic value.</li> </ul>

Opportunity: Improving livelihood of local communities				
<ul style="list-style-type: none"> <li>• Slash and burn agriculture</li> <li>• Transhumance</li> <li>• Land tenure overlaps among communities and state</li> <li>• Migration</li> <li>• Lack of alternative income activities for livelihood.</li> </ul>	Gagged Forests Management Project  Energy Service Improvement Project  Agricultural Productivity and Diversification Additional Financing  Agricultural Competitiveness and Export Diversification Project  Benin Program Support to Value Chains Development	<ul style="list-style-type: none"> <li>• Assess the economic value of non-timber forest products, their economic and social importance and the level of their use.</li> <li>• Research and Development of NTFPs value chains.</li> <li>• Promotion of pilot actions for the restoration of degraded lands at the community and smallholder level.</li> <li>• Sustainable Agriculture intensification.</li> </ul>	Investment project Financing including technical assistance  Advisory Services and Analytics  Private sector options: MIGA and IFC	<ul style="list-style-type: none"> <li>• Diversify sustainable livelihoods and income-generating activities (aquaculture, beekeeping, market gardening, planting, mushroom cultivation, other NTFPs, etc.) to ensure community resilience and reduce pressures on protected areas.</li> <li>• Assess the natural extent of non-timber forest products, their economic and social importance and the level of their use.</li> <li>• Promote the development of NTFP value chains.</li> <li>• Strengthen links with research to better value NTFPs.</li> <li>• Promote agriculture intensification, with improved seeds and sustainable land and water management.</li> <li>• Strengthening food security through the promotion of alternative income-generating activities</li> </ul>
Opportunity: Building resilience towards climate change and climate change mitigation				
<ul style="list-style-type: none"> <li>• High level sea rise</li> <li>• Extreme heat and rainfall anomalies.</li> <li>• Forest fires</li> <li>• Increased floods and droughts.</li> <li>• High vulnerability for climate disasters</li> <li>• Food insecurity</li> </ul>	Gagged Forests Management Project  Energy Service Improvement Project  West Africa Coastal Areas Resilience Investment Project  Disaster Risk Management Development Policy Credit with Cat DDO  Stormwater Management and Urban Resilience Project  Strengthening the Legal, Institutional and Technical Capacity to Manage Climate and Disaster Risks, and Health Emergencies in Benin	<ul style="list-style-type: none"> <li>• Measurement, reporting, and verification (MRV) forestry system. Forest fire assessment</li> <li>• Update the forest sector climate change adaptation strategy and plan.</li> <li>• Introduction to carbon market</li> </ul>	Investment project Financing including technical assistance  Advisory Services and Analytics  Private sector options: MIGA and IFC  Trust Funds and Grants	<ul style="list-style-type: none"> <li>• Develop and implement an appropriate forest fire control and management strategy.</li> <li>• Update the forest sector climate change adaptation strategy and plan.</li> <li>• Establish a national measurement, reporting, and verification (MRV) system in the context of REDD+.</li> </ul>
Opportunity: Nature-based tourism				
<ul style="list-style-type: none"> <li>• Illegal hunting</li> <li>• Ecotourism sector underdeveloped</li> <li>• Weak support for development of the private sector.</li> <li>• Lack of statistics on tourism revenues</li> </ul>	Benin Cross Border Tourism and Competitiveness Project	<ul style="list-style-type: none"> <li>• Improve statistics in biodiversity</li> <li>• Private sector diagnostic</li> <li>• Tourism revenue statistics</li> <li>• Strengthening of nature-based tourism</li> </ul>	Investment project Financing including technical assistance  Advisory Services and Analytics  Private sector options: MIGA and IFC  Trust Funds and Grants	<ul style="list-style-type: none"> <li>• Promote ecotourism activities in protected areas to enhance the value of natural resources.</li> <li>• Improve biodiversity monitoring and statistics.</li> </ul>

# 6 Conclusions and recommendations



## 6. Conclusions and recommendations

As emphasized in the note, the forestry sector in Benin is highly vulnerable with a number of urgent challenges to address to prevent further forest loss and forest degradation. Challenges of deforestation and forest degradation are linked mainly to direct and indirect drivers. Indirect drivers include poor forest governance, rapid population growth and persistent poverty, forest financing challenges, land tenure issues, and climate change. The direct drivers include rapid agriculture encroachment, energy demand, illegal logging, urbanization, and hunting and poaching. Likewise, there are opportunities to address these challenges and support a sustainable development of the forestry sector for a forest-smart development approach in Benin. The new forest policy identified opportunities and recommendations to strengthen the forestry sector. While many of these are being supported through the World Bank's operations, more could be integrated in key sectors' drivers of deforestation such as agriculture, energy, tourism, and urbanization sectors; see annex 4 for the complete list. The number of urgent actions identified with a timeline up to 2025 was higher in comparison to longer-term aims. This shows the fragile environment that forest management and conservation is currently exposed to and the urgency of strengthening the forestry sector in Benin.

In line with the World Bank main pillars of the Forest Action Plan, Climate Change Action Plan, and the World Bank's twin goals of ending extreme poverty and building shared prosperity, the development of a World Bank Group proposed programmatic approach to attain forest-smart development would entail supporting the Government of Benin to explore the potential of its forests for economic development, poverty reduction, and sustainable development. On the basis of the PRIME<sup>9</sup> framework, this engagement is envisaged to address the main gaps through a landscape approach to reverse the trend of rapid deforestation and forest degradation in Benin. A forest-smart development approach indicates addressing barriers and promoting opportunities in and outside the forest sector, which impact on forest development. Further, the World Bank Group's organizational structure, based on organizational units responsible for regions and different sectors can enable effective delivery of multisector solutions tailored to country-specific needs.

The identified cross-cutting approaches are addressing climate change and promoting resilience and climate change mitigation, strengthening forest rights and community involvement in decision-making processes at the local level, and strengthening forest institutions and governance. The integrated landscape approaches are looking into other economic sectors identified as drivers of deforestation such as the energy, agriculture, and urban sectors. Tourism on the other hand was identified as an opportunity to further look into nature-based interventions. At the policy level, more support should be given to country-owned strategies that seek synergies and minimize trade-offs between interacting land uses (including agriculture, energy, ecosystem services, and biodiversity).

<sup>9</sup> This note was developed based on the PRIME framework guidance under the World Bank Group's Forest Action Plan that looks at the nexus between forests and economic development and the role of forests as pathways out of poverty.

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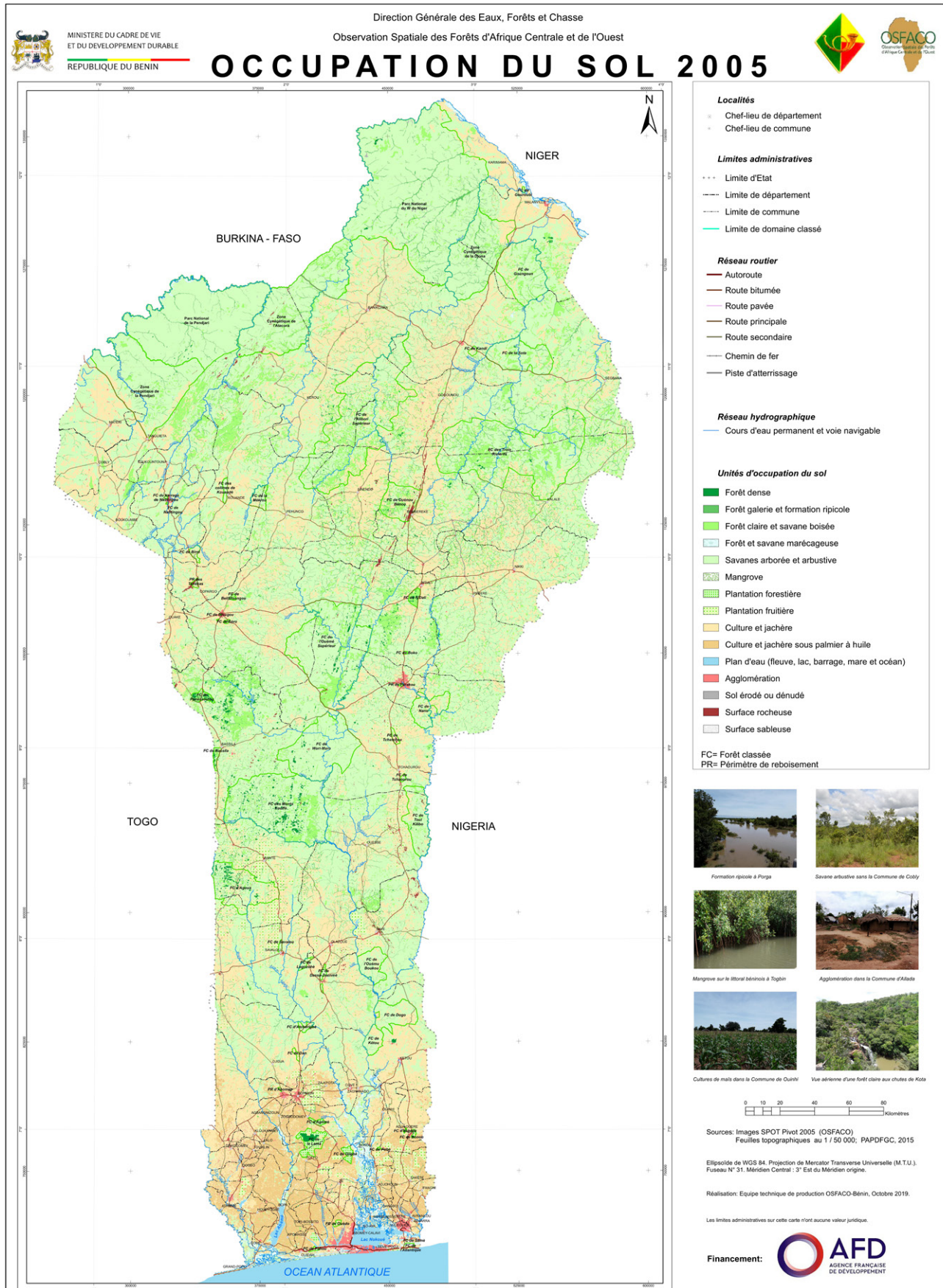
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# Annex 1. Land use and land use change in Benin 2005–2015



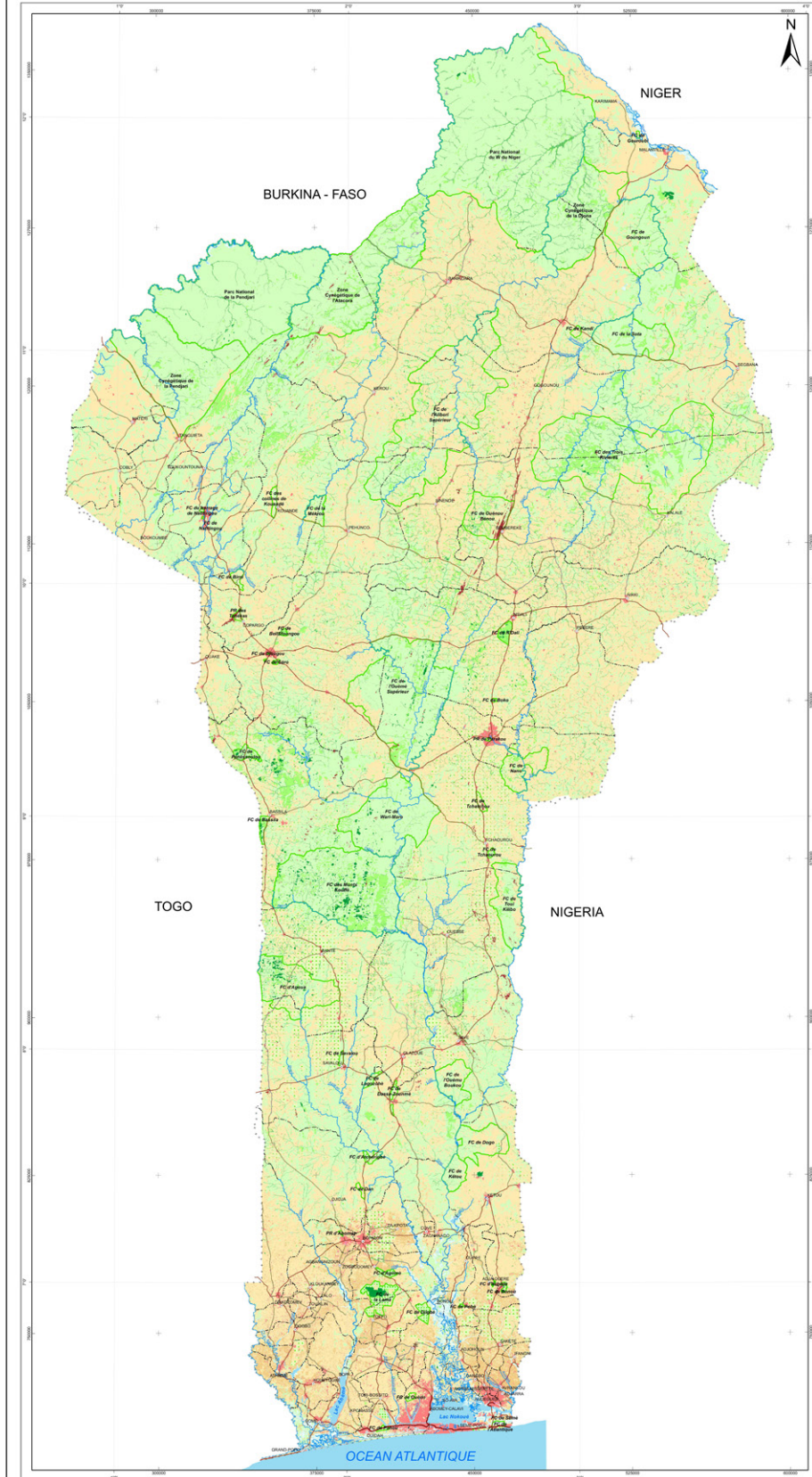


MINISTÈRE DU CADRE DE VIE  
ET DU DÉVELOPPEMENT DURABLE  
REPUBLIQUE DU BENIN

Direction Générale des Eaux, Forêts et Chasse  
Observation Spatiale des Forêts d'Afrique Centrale et de l'Ouest



# OCCUPATION DU SOL 2015



**Localités**

- Chef-lieu de département
- Chef-lieu de commune

**Limites administratives**

- Limite d'Etat
- Limite de département
- Limite de commune
- Limite de domaine classé

**Réseau routier**

- Autoroute
- Route bitumée
- Route pavée
- Route principale
- Route secondaire
- Chemin de fer
- Piste d'atterrissage

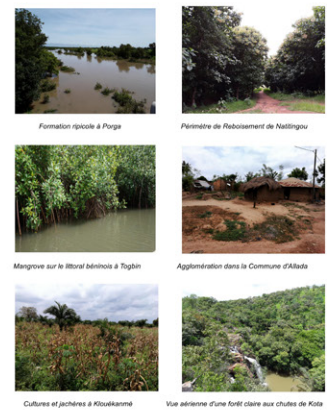
**Réseau hydrographique**

- Cours d'eau permanent et voie navigable

**Unités d'occupation du sol**

- Forêt dense
- Forêt galerie et formation ripicole
- Forêt claire et savane boisée
- Forêt et savane marécageuse
- Savanes arborée et arbustive
- Mangrove
- Plantation forestière
- Plantation fruitière
- Culture et jachère
- Culture et jachère sous palmier à huile
- Plan d'eau (fleuve, lac, barrage, mare et océan)
- Agglomération
- Sol érodé ou dénudé
- Surface rocheuse
- Surface sableuse

FC= Forêt classée  
PR= Périmètre de reboisement



Sources: Images SPOT Pivot 2015 (OSFACO)  
Feuilles topographiques au 1 / 50 000; PAPDFGC, 2015  
Données Terrain 2018 - 2019.

Ellipsoïde de WGS 84. Projection de Mercator Transverse Universelle (M.T.U.).  
Fuseau N° 31. Méridien Central : 3° Est du Méridien origine.

Réalisation: Equipe technique de production OSFACO-Bénin, Octobre 2019.

Les limites administratives sur cette carte n'ont aucune valeur juridique.



## Annex 2. Key institutions involved in the management of forests in Benin

The forestry sector has undergone significant changes at the institutional level. In accordance with the forest legislation and decentralization laws, natural resource management involves the following main groups of actors.

- The ministry in charge of forests, currently the Ministry of Living Environment and Sustainable Development (MCVDD), is the Administration of Water, Forests, and Hunting. It is a component of the Public Security and Assimilated Forces and is made up of a set of entities that perform complementary functions of empowerment (policy, regulation, and control of standards) and delivery (provision of services).
- The Directorate General of Water, Forests, and Hunting (DGEFC) is responsible for the development and implementation of policies, strategies of the forestry sector for the sustainable management of natural resources (forest, wildlife, and others), legislation and sectoral regulations throughout the country.
- Forest sector centers and boards include the following:
  - The National Office for Wood (ONAB), which has a mandate for the development and management of state-owned plantations
  - The National Center for the Management of Wildlife Reserves (CENAGREF), in charge of the management of wildlife areas including national parks and hunting areas
  - The National Center for Remote Sensing and Ecological Monitoring (CENATEL)
  - The Center for Studies, Research, and Forest Training (CERF)
  - The National Fund for Forest Development (FNDF)
- Ministries whose missions are linked to the forestry sector include the following:
  - The Ministry of Agriculture, Animal Husbandry, and Fisheries, in charge of agricultural development policy, including advisory support and organization of agricultural producers, who are the main users of forest resources
  - The ministry in charge of Energy, with a mandate to draw upon policy and strategy for domestic fuels
  - The ministry in charge of Water, whose mandate is the elaboration of policies, strategies, and plans for integrated water resources management, including river basin management to guarantee all water use needs
  - The Ministry of Decentralization, Governance, and Land Management
  - The Ministry of Tourism
- Decentralized local authorities represented by the municipalities with legal competence in the management of the environment and natural resources. As such, this actor is a major legal interlocutor in the management of forest resources.
- Grassroots communities, organized in local co-management structures
- Private sector operators involved in the production, marketing, and processing of forest products and services

- **NGOs and CSOs.** Many of these actors, whether national or international, are involved in the forest sector. They focus on awareness-raising and social mobilization activities but are also involved in management and promotion of ecotourism and protection of biodiversity. The management of the PNP has been delegated to the international NGO African Park Network (APN) since February 2017 (Government of Benin 2019a).

The following table is a list of key stakeholders in sustainable forest management at the grassroots:

Position	Responsibility
<b>Elected officials</b>	
Mayor	The law on decentralization gives the municipality, of which the mayor is the top official, a legal personality with financial autonomy and extensive powers over the management of natural resources falling within its jurisdiction.
District Chief	Under the mayor's supervision, the District Chief ensures compliance with municipal laws/regulations and serves a managerial role in implementation of participatory forest management plans.
Village Chief	The Village Chief typically combines the role of a traditional chief with that of modern administrator.
<b>Other stakeholders</b>	
Customary / Fetish Chiefs	Guardians of traditional culture and religion, Customary Chiefs uphold rules and mores related to forest use, such as prohibitions, taboos, and sacred groves.
Civil Society	Civil society represents a range of groups including those who engage in activities that tend to degrade forest resources, e.g. groups/associations of women, youth, beekeepers, charcoal makers, etc.
Municipal Development Associations	Development Associations are often dedicated to addressing questions related to the socio-economic and cultural development of their locality; serve as a check and balance at the town hall to monitor good governance.
NGOs	NGOs involved in the management of natural resources located in the program area, will support municipalities and populations with very limited expertise in technical management (planning, development, technology transfer, administration and accounting) of questions local development and the environment.
Private Sector	Individuals and enterprises using or desiring to use forest resources for commercial purposes.

Source: MAEP, 2005.

Institution	Composition	Responsibilities
OVGF	<ul style="list-style-type: none"> <li>Anyone directly involved in forest management activities</li> </ul>	<ul style="list-style-type: none"> <li>Carrying out of any activity related to the forest management plan</li> </ul>
CVGF	<p>No more than 11 members, at least 40% of whom are women, including:</p> <ul style="list-style-type: none"> <li>Village Chief</li> <li>CTAF representative</li> <li>Two Peulh representatives</li> <li>One representative from each major professional category (e.g. farming, herding, fishing, hunting, craft making)</li> <li>One representative from the municipal development association</li> <li>One local NGO representative</li> <li>One village elder or opinion leader</li> </ul>	<ul style="list-style-type: none"> <li>Execute forest management plan activities pertaining to their territory</li> <li>Identify/mobilize economic interest groups, other members of the population for forest management activities</li> <li>Collect contributions for the development fund</li> <li>Raise awareness on sustainable natural resource management issues</li> <li>Mediate disputes/conflicts</li> <li>Hold periodic meetings to inform village on the status of development activities; participate in meetings with Forestry Administration</li> <li>Assist Forestry Administration in policing forest</li> <li>Perform periodic self-assessments of activity progress</li> <li>Report and elect members to the CGUA</li> </ul>
CGUA	<ul style="list-style-type: none"> <li>Three representatives from the executive committee of each CVGF</li> <li>District Chief</li> <li>Representative(s) from the municipal development association(s)</li> <li>One local NGO representative</li> <li>One CTAF representative</li> </ul>	<ul style="list-style-type: none"> <li>Planning, budgeting, implementation, oversight of Annual Work Plans</li> <li>Signing of operating contracts with forest users</li> <li>Hold periodic meetings (quarterly Work Plan and provisional budget self-assessments, statutory meetings, etc.)</li> <li>Centralize development fund contributions collected at the lower level</li> <li>Sign contracts with the CGPF to carry out forest management activities (plant production, enrichment planting, forest maintenance)</li> <li>Broadcast Information, Education and Communication programming through local media on sustainable management of natural resources</li> <li>Approve Annual Work Plans and Provisional Budgets of the Planning Units</li> <li>See to proper management of forest management funds</li> <li>Sign contracts related to forest use and forest enrichment</li> <li>Authorize expenditures</li> <li>Obtain grants, subsidies, bequests</li> </ul>
CCUA	<ul style="list-style-type: none"> <li>Comprised of members of CGUAs who take turns on a rotating basis managing the coordination of all CGUAs</li> </ul>	<ul style="list-style-type: none"> <li>Sign contracts with the CGPF to carry out forest management activities (plant production, enrichment planting, forest maintenance)</li> <li>Broadcast Information, Education and Communication programming through local media on sustainable management of natural resources</li> <li>Approve Annual Work Plans and Provisional Budgets of the Planning Units</li> <li>See to proper management of forest management funds</li> <li>Sign contracts related to forest use and forest enrichment</li> <li>Authorize expenditures</li> <li>Obtain grants, subsidies, bequests</li> </ul>
CGPF	<ul style="list-style-type: none"> <li>CTAF Coordinator</li> <li>Chief of Planning Units</li> <li>Chief of Forest Inspection (or his representative)</li> <li>Mayors</li> <li>District Chiefs</li> <li>Village Chiefs</li> <li>Official in charge of municipal Environment and Protection of Nature departments</li> <li>Five representatives from community co-management structures, including at least two women</li> </ul>	<ul style="list-style-type: none"> <li>Validate budget and approve balance sheet of the CTAF's Annual Work Plan</li> <li>Monitor and evaluate implementation of the participatory forest management plan</li> <li>Ensure participation of local residents and local governments in forest protection</li> <li>Facilitate amicable and peaceful management of conflicts, specifically those related to the implementation of the participatory forest management plan</li> </ul>

Source: MAEP, 2005.

## Annex 3. World Bank engagement in the forestry sector

Benin's SCD (Report No. 114822-BJ) identifies that "habitat loss and degradation, including marine areas, mangroves, wetlands, and coastal vegetation, poses sustainability risks associated with the loss of overall natural capital. Loss of natural habitat also engenders a loss of biodiversity functions and services such as wetlands for flood control, areas for recreation and tourism, or, in the case of mangroves, protection against coastal erosion."

Benin's CPF for FY19–23 (Report No. 123031-BJ) under Focus Area 1 'Structural Transformation via Competitiveness and Productivity'; Objective 2 'Improving the quality of infrastructure'; Objective 3 'Improving Governance Capacity for Effectiveness and Accountability'; Focus Area 3 'Increasing Resilience and Opportunity, and Reducing Climate-Related Vulnerability'; Objective 7 'Building Resilience at the Community Level'; and Objective 8 'Addressing Climate-related Threats and Vulnerabilities' highlights the need to address the capacity on governance, improve energy infrastructure including opting for green alternatives, and build resilience leading to improved management and conservation of forests including in areas of high conservation value.

**Gazetted Forests Management Project (US\$75 million).** The project will support activities for the sustainable management of the GFs and represents forest-smart development interventions aligning with the World Bank's Forest Action Plan (FY16–20), Climate Change Action Plan (2016–2020), and Benin's CPF (FY19–23). The project aims to establish forest plantations and enhance protection of areas of high conservation value in the GFs, supporting large-scale fuelwood plantations to contribute to the energy needs of the main consumption cities (Cotonou, Abomey-Calavi, and Porto-Novo). Forest plantations will be established on a total area over 883,000 ha and will improve forest governance and monitoring by strengthening the capacity at the Forest Administration and the CENATEL, improve efficient charcoal production, promote agricultural intensification and agroforestry methods, and create alternative livelihood alternatives. The project aims to generate revenues from 22,000 ha of production forests (15,000 ha acacia and 7,000 ha teak). This amount estimated for Acacia is US\$55.4 million based on a total production of 120 m<sup>3</sup> per ha (1.8 million m<sup>3</sup>). For the 7,000 ha of teak, the revenues are estimated at US\$79.1 million over a period of 23 years. ONAB will contribute a percentage of teak revenues to the GFs account window. Preliminary assessments show that the project will contribute to reducing carbon emissions with over 10 million tCO<sub>2</sub>-eq sequestered over a period of 20 years.

The project will also support the development of honey and shea value chain as alternative livelihood. The project will finance technical assistance to assess the stock of shea nut trees in and around the largest GFs in the north (Alibori Supérieur, Ouémé-Supérieur-Ndali, Trois Rivières, and Ouénou-Bénou) and will develop a production and management plan of the shea plantations with the aim to establish 1,500 ha to respond to market demand in the long term and avoid shortage in supply given the aging of shea nut trees. The project will also finance technical assistance including research on improvement of collection, conservation, and processing techniques; training of shea nuts collectors on those techniques; and a marketing study looking at sources of demand, packaging, labeling, and certification options and providing recommendations to implement the best options to be financed by the project. The project will also finance processing units for shea nuts for the benefit of women to be organized in cooperatives; finance certification process of the shea butter for export; and support women participation in national, regional, and international fairs thereby connecting them with potential buyers. Given that transformation of shea nuts to butter is highly energy-consuming, the project will explore ways for use of energy-efficient technologies, that is, solar energy to operate the processing units and provide improved energy-efficient stoves to women groups specializing in nuts collection and transformation. The project will also finance services of local NGOs, research, and university to support implementation of the subcomponent.

**The Energy Service Improvement Project (US\$60 million) aims to focus on community-based management of wood fuels to reduce the pressure on deforestation in the northern region of Benin.**

The project will implement community-based forest management plans covering 300,000 ha in several municipalities, including financing tree nurseries, tree plantings, logistical support, training of key actors on forest resource management and energy-efficient charcoal production, communication campaigns targeting local governments and households, and acquisition of equipment for income-generating activities such as beekeeping.

**The West Africa Coastal Areas Resilience Investment Project in Benin (US\$56.57 million) aims to strengthen the resilience toward coastal erosion.** The West Africa Coastal Areas Resilience Investment Project (WACA ResIP) is a multicountry regional project that will support the strengthening of resilience of coastal communities and assets in six western African countries—Benin, Côte d'Ivoire, Mauritania, São Tomé and Príncipe, Senegal, and Togo. These six countries, covering approximately 2,186 km of coastline, have particularly vulnerable coastal areas (erosion, flooding, and pollution) and have a degree of readiness through multisectoral investment planning processes. In terms of rehabilitation through green solutions, the project aims to reforest 250 ha of mangroves as well as support the conservation of 9,000 ha of forests. Preliminary assessments show that the interventions will lead to 117,236 tCO<sub>2</sub>-eq of emission reductions.



Table 5. World Bank engagements in Benin FY17–FY21 linked to forest-smart interventions

Project Name	Lead GP/ Global Themes	FY	Commitments (\$M) - Total	IBRD (\$M)	IDA (\$M)	Co- Financing(\$M)
<b>Pipeline</b>						
Agricultural Competitiveness and Export Diversification Project	Agriculture	2020	160		160	
Disaster Risk Management Development Policy Credit with Cat DDO	Urban, Resilience and Land (URL)	2021	30		30	
Benin Program Support to Value Chains Development	Agriculture	2021	100		100.0	
<b>Active Portfolio</b>						
Agricultural Productivity and Diversification Additional Financing	Agriculture	2017	45		45	
Benin Cross Border Tourism and Competitiveness Project	Finance, Competitiveness and Innovation (FCI)	2016	50		50	
Energy Service Improvement Project	Energy & Extractives	2017	60		60	
Gazetted Forests Management Project	Environment, Natural Resources and Blue Economy (ENB)	2019	75		75	
Stormwater Management and Urban Resilience Project	URL	2019	100		100	
West Africa Coastal Areas Resilience Investment Project	ENB	2018	56.57	30	15	11.57
<b>Trust Funds</b>						
<b>Pipeline</b>						
Strengthening the Legal, Institutional and Technical Capacity to Manage Climate and Disaster Risks, and Health Emergencies in Benin. (Global Facility for Disaster Risk Reduction (GFDRR))	URL	2021				0.6
<b>Active Portfolio</b>						
Nutrition Sensitive Agriculture & Capacity Building of Small & Marginal Farmers Project (Japan Policy and Human Resources Development Fund)	Agriculture	2016	2.48			2.48
<b>Total</b>			679.05			
<b>Advisory Services and Analytics</b>						
Gazetted Forests Assessment	ENB	2018				
Transhumance and conflicts between farmers and herdsmen: links to poverty and inequality	Poverty and Equity	2019				
Improving access to markets, financial inclusion and supotech for e-money institutions.	FCI	2020				

## Annex 4. List of priority actions for sustainable forest management and forest-smart development in Benin based on the new forest policy

Table 6. List of interventions for sustainable forest management and forest smart development

Category	Actions up to 2025	Actions up to 2030
<b>Strengthening Forestry Sector</b>		
Governance	<ul style="list-style-type: none"> <li>Update and implement planning and management tools for forests and plantations (natural forests, sacred forests, mangroves, wetlands, wildlife reserves, nature reserves, forest plantations).</li> <li>Strengthening logistics, operational and staff capacity under DGEFC.</li> <li>Support the implementation of the institutional and regulatory framework for forest resource management.</li> <li>Establish an institutional and regulatory framework for the co-management of reforestation activities.</li> <li>Develop and implement plans and tools to optimize the forest monitoring system.</li> <li>Strengthen the national system for the implementation of forest co-management.</li> <li>Revise regulatory and enforcement texts on forests, wildlife, grazing, transhumance and slow grazing.</li> <li>Establish a national measurement, reporting, and verification (MRV) system in the context of REDD+.</li> <li>Develop a national reforestation strategy</li> </ul>	
Land tenure	<ul style="list-style-type: none"> <li>Support the process of integration of the State classified domain into the national cadaster.</li> <li>Develop the land use master plan to secure forest areas to support rural timber markets.</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen land tenure security in the mangrove and related ecosystems areas</li> </ul>
Fiscal and financing	<ul style="list-style-type: none"> <li>Assessing the contribution of the forest sector to GDP.</li> <li>Developing a sustainable financing mechanism for forest management in Benin.</li> <li>Making the National Forest Development Fund operational.</li> <li>Updating forest taxation to further encourage sustainable forest management.</li> <li>Define and implement tax incentives that encourage forest entrepreneurship, particularly for the development of forest plantations.</li> <li>Improve the forest revenue control and collection system.</li> </ul>	<ul style="list-style-type: none"> <li>Develop innovative financing mechanisms (payment for ecosystem services, mainly under the REDD+ regime, based on an equitable distribution among the different rights holders, carbon taxes, etc.).</li> </ul>

Category	Actions up to 2025	Actions up to 2030
Production	<ul style="list-style-type: none"> <li>• Develop and make operational a national system for the production and supply of quality forest seedlings (production, supply and distribution unit for forest seedlings) for reforestation purposes.</li> <li>• Support the forest certification process initiated by ONAB</li> <li>• Promote research and development in the field of silviculture for autochthonal species of high economic value.</li> <li>• Establish a permanent system for the collection, processing and dissemination of disaggregated statistical data.</li> <li>• Manage a database on forest resources and regularly assess the consumption of forest and non-timber products</li> <li>• Strengthen technical, material and organizational capacities of private nurseries and producers.</li> </ul>	
Markets and Investments	<ul style="list-style-type: none"> <li>• Update the national strategy for rural timber markets.</li> <li>• Strengthen the technical and organizational capacities of stakeholders in the management of rural timber markets.</li> <li>• Develop the strategy for mobilizing private partnerships for the financing and development of the forestry sector.</li> </ul>	
Livelihood	<ul style="list-style-type: none"> <li>• Diversify sustainable livelihoods and income-generating activities (aquaculture, beekeeping, market gardening, planting, mushroom cultivation, other NTFPs, etc.) to ensure community resilience and reduce pressures on protected areas.</li> <li>• Assess the natural extent of non-timber forest products, their economic and social importance and the level of their use.</li> <li>• Promote the development of NTFP value chains.</li> <li>• Strengthen links with research to better value NTFPs.</li> <li>• Promotion of pilot actions for the restoration of degraded lands at the community and smallholder level.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote research on knowledge of the socio-economic and ecological values of NTFPs.</li> </ul>
Ecosystem services	<ul style="list-style-type: none"> <li>• Identify and integrate sacred forests, mangroves and other related ecosystems into Benin's protected area system.</li> <li>• Support the creation of networks of Protected Areas and transboundary ecosystems.</li> <li>• Improve biodiversity monitoring and statistics.</li> <li>• Support ongoing reforestation programs with a focus on watershed protection.</li> <li>• Identify and classify sites of ecological interest for plant and animal conservation.</li> <li>• Implement a multi-year programme to restore degraded land in marginal areas (north-west, Abomey Plateau,...)</li> <li>• Updating/configuration of land framework documents allowing a better knowledge of the socio-land status, its potential and levels of land degradation.</li> <li>• Carry out thematic mapping and GIS of all protected areas</li> </ul>	<ul style="list-style-type: none"> <li>• Update the national conservation strategy for Benin's wildlife reserves.</li> </ul>
Climate Change	<ul style="list-style-type: none"> <li>• Develop and implement an appropriate forest fire control and management strategy.</li> <li>• Update the forest sector climate change adaptation strategy and plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Assessing the impact of climate change on forest ecosystems</li> </ul>
<b>Promote synergies for forest smart development</b>		
Multi-stakeholder platforms	<ul style="list-style-type: none"> <li>• Develop a platform for consultation between energy, environment, agriculture and tourism for sustainable management of natural resources.</li> </ul>	<ul style="list-style-type: none"> <li>• Establish cross-border and international partnerships to assist in the management of major fires.</li> </ul>

Category	Actions up to 2025	Actions up to 2030
Agriculture	<ul style="list-style-type: none"> <li>Promote agriculture intensification, with improved seeds and sustainable land and water management.</li> <li>Ensure harmonization of agricultural policy and national forest policy to be consistent with reforms aimed at preserving forests.</li> <li>Strengthening food security through the promotion of alternative income-generating activities</li> </ul>	
Energy	<ul style="list-style-type: none"> <li>Promote butane gas and equipment including energy saving alternatives (improved cookstoves) to reduce pressure on forest resources.</li> <li>Popularize high-efficiency carbonization techniques that can reduce wood consumption in households (improved stoves,...)</li> </ul>	<ul style="list-style-type: none"> <li>Promoting renewable energy for domestic use</li> <li>Developing technology for manufacturing organic-based coal briquettes.</li> </ul>
Tourism and valorization of protected areas	<ul style="list-style-type: none"> <li>Develop business plans for wildlife areas.</li> <li>Create an enabling environment for public-private partnerships.</li> <li>Promote ecotourism activities in protected areas to enhance the value of natural resources.</li> </ul>	<ul style="list-style-type: none"> <li>Adopt an entrepreneurial approach to wildlife area management.</li> </ul>
Urbanization	<ul style="list-style-type: none"> <li>Promote urban forestry and trees outside forests</li> </ul>	

## Annex 5. Benin Forest Governance Assessment

The forest governance assessment applied the PROFOR tool to the FAO-PROFOR governance framework<sup>11</sup>. The tool measures the quality of forest governance along three key pillars: (i) policies, laws and regulations, (ii) the planning and decision-making process, and (iii) the implementation of the various policies and programs for the sector.

**Stakeholders:** A multi-stakeholder workshop was held in Bohicon, Benin from November 25-26, 2019. The workshop brought together 40 participants representing a dozen categories of stakeholders and actors: (i) Communes; (ii) Private operators in the forestry sector; (iii) Water, Forests and Hunting Administration; (iv) National Timber Offices; (v) Ministry of Economy and Finance, in particular the General Directorate of Budget; (vi) the Directorate of Agriculture, the Territorial Development Agency for Agriculture; (vii) civil society involved in the protection of forests; (viii) local community organizations around natural forests and plantations; (ix) the judicial service; (x) Technical and Financial Partners, including the UNDP; (xi) the Planning and Prospective Department of the MCVDD; and (xii) the Integrated Project Management Unit of the Environment and Natural Resources sector under the Minister of Living Environment and Sustainable Development (MCVDD).

**Identifying high-priority forest governance issues:** Workshop participants discussed 65 indicators of forest governance of relevance to national context. These were scored on a scale of 1 to 5 (1 being weak and 5 strong). Thereafter, 12 indicators were identified and ranked deemed to be the highest priority for improvement as a means to improve substantially the quality of governance in the sector (Table 7).

**Next steps:** The workshop identified concrete and practical steps to address the above weaknesses in forest governance that need to be implemented in Benin. Workshop participants agreed on the drafting of an action plan emerging from the actions and recommendations of the workshop. The Benin Forestry Administration agreed to finalize the action plan, secure funding, and take a leading role in its implementation.

<sup>11</sup>The PROFOR tool and the FAO-PROFOR framework can be accessed at: <https://www.profor.info/content/assessing-and-monitoring-forest-governance>

Table 7. Score and order of priority of forest governance indicators in Benin

Voting Results	Governance component and indicator question	Score
1st	Effectiveness of forest crime prevention measures and tools Does the government's forest law enforcement strategy include effective measures to prevent, detect and suppress forest offenses?	2/5
2nd	Alignment / coherence of land use plans with forest policy priorities and goals Are land use plans consistent with forest policy priorities and goals	1/5
3rd	Adequacy of staff capacity and efficiency of agencies responsible for forest administration Are agency staff salaries and benefits sufficient to attract and retain qualified staff?	2/5
4th	Capacity and will of the judiciary and law enforcement agencies to deal effectively with forest offenses Are judges and magistrates aware of the repercussions of forestry offenses, and do they support the repression of illegal activities	2/5
5th	Existence and quality of policies, laws and regulatory texts that govern the use and management of forests Do forest management budgets and plans address the main drivers of deforestation and forest degradation?	2/5
6th	Adequacy of staff capacity and effectiveness of agencies responsible for forest administration Are the agency's foresters who work in the field able to monitor the areas assigned to them?	2/5
7th	Adequacy, predictability and stability of forest budgets and organizational resources Are forest agency budgets based on national goals for sustainable forest management and are independent of forest revenues, donor funding, and other distorting factors?	1/5
8th	Extent to which forest management in the field follows adopted policies, laws and plans Do state forests have valid management plans and are these implemented?	2/5
9th	Coherence and coordination of sectoral policies, laws and regulations (mining, agriculture, transport, energy, etc.) with forest policies, laws and regulations Do the sectors that depend directly on forests as well as the sectors that directly affect forests include forest and tree activities in their plans and budgets?	2/5
10th	Existence and quality of policies, laws and regulations governing forest use and management Do forest sector policies and strategies recognize the role of the private sector?	2/5
11th	Relevance and consistency of the application of sanctions in the event of breach of forest laws and regulations Are the penalties for forest offenses large enough and are they adjusted to match the offense?	2/5
12th	Existence and effectiveness of dispute and complaint resolution mechanisms Are there practical and effective spaces / frameworks offered to stakeholders to request the review and reconsideration of decisions made by forest management agencies?	2/5





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