

DEMOCRATIC REPUBLIC OF CONGO
Vice-Prime Minister



Ministry of Environment and Sustainable
Development

Revised Nationally
Determined Contribution

Kinshasa, October 2021

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Acronyms

Acronyms	Meanings
%	Percentage
°C	Degree Celsius
AFOLU	Agriculture, Forestry and Other Land Uses
AFOLU	Agriculture, Forestry and Other Land Use
AGR	Income-Generating Activities
AGR	Income-Generating Activities
ANATAC	National Alliance of Traditional Authorities of Congo
CROSSBEAM	Business as Usual
BCC	Central Bank of Congo
UNFCCC	United Nations Framework Convention on Climate Change
CDN	Nationally Determined Contribution
CEDEN	Circle for the Defense of the Environment
CN	National Communications
CN	National Communications
CODELT	Advice for Environmental Defense through Legality and Traceability
COMIFAC	Central African Forestry Commission
COPEMECO	Confederation of Small and Medium-Sized Enterprises
COVID-19	Coronavirus pandemic, which appeared in 2019
INDCs	Intended Nationally Determined Contribution
DAS	Sanitation Department
DDD	Sustainable Development Department
APD	Dynamics of the Indigenous Peoples Group
DIAF	Forest Management and Inventories Directorate
EDC	Electricity of the Congo
EFIR	Reduced Impact Logging
ENERKA	Energy of Kasai
ENK	Electricity of North Kivu
ERAIFT	Postgraduate Regional School of Planning and Integrated Management of Tropical Forests
EVA	Healthy School and Village
FAO	Food Organization of the United Nations
CONCEITED	Forestry and Other Land Use
FEC	Federation of Enterprises of Congo
FEC	Federation of Enterprises of Congo
FIB	Federation of Wood Manufacturers
FONAREDD	National REDD+ Fund
TDM	Sustainable Land Management
GHG	Greenhouse Gases
IPCC	Intergovernmental Panel on Climate Change
GPL	Liquefied Petroleum Gas
CRPG	Renewed REDD+ Climate Working Group
GW	Gigawatt
Ha	Hectare
HPS	High-pressure sodium vapor lamps (HPS)

Acronyms	Meanings
IDE	Foreign Direct Investment
HDI	Human Development Index
INERA	National Institute for Agronomic Studies and Research
INS	National Institute of Statistics
ISF	Total Fertility Rate
Kg	Kilogram
Miles	Kilometre
Km ²	Square kilometre
LED	Light-Emitting Diode
LEDS	Strategy from Development Sober in Carbon/Low Emissions Development Strategy
LINAPYCO	National League of Indigenous Pygmy Associations of Congo
LPS	Low-pressure sodium vapor lamps
m ³	Cubic metre
NAMA (NAMAS)	Nationally Appropriate Mitigation Measures
MAED	Energy Demand Analysis Model
MAGICC-ScenGen	Model for the Assessment of Greenhouse-gas Induced Climate Change
USD / US\$ billion	Billion US Dollars
CDM	Clean Development Mechanism
MECNT-DD	Ministry of the Environment, Nature Conservation and Development Durable
MEDD	Ministry of Environment and Sustainable Development
MIBA	Bakwanga Mining Company
MINAGRI	Ministry of Agriculture
MINAT	Ministry in charge of Spatial Planning
MITPR	Ministry of Infrastructure, Public Works and Reconstruction
VNM	Measurement, Notification and Verification
Mt	Megatons
Mt CO ₂ e	Megaton Carbon Equivalent
MW	Megawatt
ND-GAIN	Notre Dame Global Adaptation Index Notre-Dame
Nm ³	Normal cubic meter
OCEAN	Congolese Organisation of Ecologists and Friends of Nature
ODD	Sustainable Development Goals
OVD	Office of Roads and Drainage
PANA	National Adaptation Programme of Action
CEO	Energy Information Management Development Program
CEO	Energy Information Management and Development Program
PDP	Provincial Development Plan
PDP	Provincial Development Plan
PEA	Agricultural business clusters
PERENCO	Franco-British independent oil company
NTFP	Non-timber forest products
PGE	Environmental Management Plan
GDP	Gross domestic product
PIUP	Industrial Processes and Product Use

Acronyms	Meanings
PNA	National Climate Change Adaptation Plan
NEBSP	National Environment, Forests, Water and Biodiversity Programme
PNG	National Gender Policy
NIPA	National Agricultural Investment Plan
PNSAR	National Programme for the Recovery of the Agricultural and Rural Sector
PNSD	National Strategic Development Plan
PONA	National sanitation policy
PSPA-CC	Policy, Strategy and Action Plan to Combat Violence Climate Change
RBA	Biennial Update Report
Ground floor	Democratic Republic of Congo
REBAC	Ecclesial Network of the Congo Basin Forest
REDD+	Reducing Emissions from Deforestation and Degradation forests, including conservation, sustainable forest management and enhancement of carbon sinks
REDD+	Reducing Emissions through Deforestation and Forest Degradation
REFADD	African Women Network for Sustainable Development
REPALEF-DRC	Indigenous and Local Peoples' Network for Sustainable Disaster Management Forest Ecosystems of the DRC
NRN	Natural Resources Network
SAFBOIS	African Timber Society
LLC	Limited Liability Company
SCTP	Congolese Transport and Ports Company
SE4ALL-RDC	Sustainable Energy for All (SE4ALL) Initiative
SENOKI	North Kivu Electricity Company
SIFORCO	Industrial and Forestry Society of Congo
DCS	National Railway Company of Congo
SNEL	National Electricity Company
SNSF	National Forest Monitoring System
SOKIMO	Société Minière de Kilo Moto
TCN	Third National Communication
TWITCH	Information and Communication Technology
UNIKIN	University of Kinshasa
US	United State
USD/US\$	US dollar
ITCZ	Intertropical Convergence Zone
SEZ	Special Economic Zones

FOREWORD

The Democratic Republic of Congo (DRC) has been a Party to the United Nations Framework Convention on Climate Change (UNFCCC) since 1997. It aims, among other things, to stabilize greenhouse gas emissions at a level that prevents any disruption to the global climate system. With the end of the Kyoto Protocol's commitment period, the Paris Agreement was adopted. Its main objective is to keep the global temperature increase "well below" 2°C by striving to limit it to 1.5°C.

To this end, the DRC is resolutely committed to contributing to the achievement of this global objective, while taking into account the challenges of modernization and sustainable development, including efforts to adopt a low-carbon development trajectory in a context of emergence.

The DRC has already submitted three National Communications on climate change and carried out several initiatives, including the National Adaptation Action Programme; the National Strategy Framework for the Reduction of Emissions from Deforestation and Forest Degradation; the Level of Baseline Emissions from Forests; and the National Adaptation Plan.

In 2015, prior to the adoption of the Paris Agreement, the DRC submitted its Nationally Determined Contribution (NDC) to the UNFCCC, which had an emissions reduction target of 17%, and mainly targeted three gases, namely: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) in the Energy sectors; Agriculture; and Forestry and Other Land Use.

To respond to the call to increase ambition, the DRC has undertaken to raise its mitigation and adaptation objectives, and to accelerate forestry, land and land use planning reforms to contribute effectively to the fight against poverty. Its current target is to reduce its emissions by 21%, taking into account the waste sector not covered by the first bid, for an estimated overall cost of forty-eight decimal sixty-eight (48.68) billion US dollars.

In my capacity as Deputy Prime Minister, Minister of Environment and Sustainable Development, I will ensure that the efforts made by the Congolese Government to preserve the environment lead to the reduction of the harmful impacts of climate change on the national economy and the improvement of the living conditions of the population. As a result, I am proud to present the revised Nationally Determined Contribution (NDC) for the period 2021-2030, through which the country reaffirms its character as a solution country through its immense forest massif, its dense hydrographic network, its energy potential and its strategic minerals.

Master Eve BAZAIBA MASUDI
Deputy Prime Minister, Minister of
Environment and Sustainable Development

Executive Summary

Introduction

This document presents the Democratic Republic of Congo's revised Nationally Determined Contribution (NDC) for mitigation and adaptation to 2030. The contributions described in this document are based on an update of the submission of the 2015 NDC, the information compiled for the development of the DRC's third National Communication on Climate Change submitted to the UNFCCC, current sectoral policies planned and implemented, such as the National REDD Strategy and Framework (MEDD, 2012), the National Strategic Development Plan (PNSD 2019-2023), the National Adaptation Plan (2020-2024) and other key national policy documents, and reflect subsequent work to develop quantifiable mitigation and adaptation targets. This document is also based on the prioritization of interventions in both the areas of adaptation and mitigation.

The revised NDC represents a more detailed assessment of mitigation and adaptation actions in the DRC, based on improved data collection, broader coverage of the energy, AFOLU and waste sectors, in-depth technical analysis and extensive stakeholder engagement, and more ambitious GHG emission reduction targets.

DRC's vision in the field of climate change

The DRC's vision for the fight against climate change is to promote a green, resilient and low-carbon economy by rationally and sustainably managing its important natural resources to ensure ecological balance and the social, economic, cultural and environmental well-being of its population.

The DRC ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1997, the Kyoto Protocol in 2005 and the Paris Agreement in 2017. To this end, the DRC is resolutely committed to taking urgent measures to mitigate its greenhouse gas (GHG) emissions and adapt to the effects of climate change, in accordance with Article 41 of the Paris Agreement. It has also submitted its first three National Communications on Climate Change to the UNFCCC, in 2001, 2009 and 2015 respectively, and is in the process of preparing its Fourth National Communication and finalizing its first Biennial Updated Report (BER).

Although its emissions come mainly from forestry and land use, followed by waste management, agriculture and energy consumption constitute an important part of its carbon footprint to require appropriate climate action, they are among the lowest in the world (MEDD, 2015). However, it remains highly vulnerable to the impacts of climate change. Therefore, adaptation to climate change is a major concern and priority for the country.

¹ Decision 1/CP.21 on the adoption of the Paris Agreement

NDC Review Process

The DRC submitted its Intended Nationally Determined Contribution (INDC) to the UNFCCC in 2015, setting out its adaptation and mitigation objectives. With the DRC's ratification of the Paris Agreement in 2017, the INDC became its first Nationally Determined Contribution (NDC).

The conditional reduction target targeted under the 2015 submission was 17% by 2030 taking into account three main sectors including Energy, Agriculture and Forestry associated with carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) emissions.

This NDC, with a reduction target of 21% with conditional interventions at 19%, and unconditional at 2%, updates and reinforces the former in terms of contributions to mitigation and adaptation, on the one hand, and through improved data collection, in-depth technical analysis and extensive stakeholder engagement, moreover. It includes, in addition to the three above-mentioned sectors (Agriculture, Forestry and Energy), that of Waste and concerns the same gases.

The budget for this revised NDC is estimated at USD 48.68 billion, including USD 25.60 billion for the implementation of announced mitigation initiatives and USD 23.08 billion for priority adaptation actions.

Contribution to mitigation

The DRC's mitigation measures focus on the forestry sector, including the implementation of its national strategy to reduce emissions from deforestation and forest degradation (REDD+). In addition to the REDD+ strategy, the DRC's Nationally Determined Contribution presents some mitigation measures and actions in the energy (including transport), agriculture and waste sectors. Unfortunately, to date, these few initiatives in sectors that emit less GHGs are less documented. However, the DRC committed to improving its data collection and management system and formalizing institutional arrangements that support the collection, analysis, processing and reporting of information on a regular and long-term basis on mitigation actions and efforts to explore associated co-benefits.

The DRC wants to be an emerging country by 2030, with a vision of development towards an increasingly decarbonized economy.

Given the development dynamic in which the DRC is committed to by 2030, its efforts will have to materialize in the implementation of various mitigation measures in all sectors.

The combined unconditional and conditional contribution is thus a 21% reduction in total GHG emissions compared to the BAU in 2030 (of which 19% conditional and 2%

unconditional); this is equivalent to an estimated level of mitigation of up to 650 Mt CO₂e by 2030.

The table below shows the main levers for intervention identified and the associated costs by sector as well as the potential for emission reductions in 2030. A total of 30 GHG mitigation actions are proposed, classified according to priority sectors.

The table below summarizes the main levers for intervention, the emissions avoided and the associated costs by sector in 2030 likely to achieve the targeted reduction target.

Sector	Nº	Actions	Reduction potential in 2030 (in Mt CO ₂ e)	Estimated Cost (Billions USD)
Energy	1	Electrifying rural areas, periphery urban and urban sources renewable energy	74.2 to 94.6	1,95
	2	Facilitate Usage some hearth improved techniques to make it more effective		1,05
	3	Increase the part some Energies in the energy mix national		0,28
	4	Promoting the use of LPG and electric cooker		0,63
	5	Develop some Industrial plantations - Wood energy		0,18
	6	Ensuring the development of the sector with a focus on mass transport across the tram, bus, train...		1,1
Agriculture	7	Promote the Practices agro-and crop rotation, and crops Perennial particularly in forested areas, including wetlands	180 to 187	1,7
	8	Integrating agriculture into the national land use plan		0,2
	9	Promote Intensive agriculture in the savannah areas with a view to Limiting pressure on forests Natural		1,33

Sector	Nº	Actions	Reduction potential in 2030 (in Mt CO2e)	Estimated Cost (Billions USD)
Agriculture, Forestry and other land use	10	Promote the rational and sustainable use of agricultural production areas to preserve agro-ecological conditions and ensure stability forest cover		1,2
	11	Intensify food crop production (carbohydrates, oilseeds, legumes) in anthropogenic savannah and degraded forest, including in forest areas (except in areas where land availability is unlikely to prevent destruction at least partial forest area)		1,3
	12	To popularize and disseminate resilient agricultural practices, and other technological packages (use of climate-sensitive seeds, soil management and water management)		0,8
	13	Improving the management of intensive and extensive livestock farming		1,2
	14	Intensify cash crop production in secondary or primary forests and savannahs, but with sustainable agroforestry systems (cocoa, coffee, banana, special crops) to enhance the comparative advantages of the peasantry to these crops		1,3
	15	Promote the traditional and modern afforestation and reforestation techniques for the Preserving forests	182 to 192	1,45
	16	Supporting the development of community forestry as a tool for biodiversity conservation and loss forest cover in rural areas		1,5
	17	Restoring wetlands, including peatlands used for agriculture and livestock farming		1,3
	18	To promote the MEOR (Methodology for the Evaluation of Restoration Opportunities) tools to national level by incorporating the		0,85

Sector	Nº	Actions	Reduction potential in 2030 (in Mt CO2e)	Estimated Cost (Billions USD)
Forests		Valuation of traditional knowledge in the conservation of biodiversity around the areas Protected		
	19	Support initiatives to establish the Forest and Landscape Restoration Platform		1,2
	20	Strengthen forest governance, including the fight against illegal logging of timber and other forest resources, taking into account the studies, analyses and tools produced in the implementation of the various forest processes such as FLEGT VPAs		1,2
	21	Managing sustainably timber harvesting		1,8
	22	Sustainably manage and rehabilitate mining and oil operations		0,09
	23	Fighting bushfires		0,11
	24	Mapping and assessing peatlands		0,52
Rubbish	25	Strengthening the institutional and legal framework for waste management	37	0,14
	26	Setting up a program of sound waste management		0,44
	27	Promote use landfill gas		0,07
	28	Promote the Energy recovery from waste (reduction CH4 emissions from landfills)		0,29
	29	Promoting aerobic composting		0,21

Sector	Nº	Actions	Reduction potential in 2030 (in Mt CO2e)	Estimated Cost (Billions USD)
	30	Promote the production of energy and organic fertilizers from solid waste, wastewater and sludge Fecal		0,21
Total				25,6

The figures below illustrate the emission projections for the BAU reference scenario of the Agriculture, Forestry and Other Land Use (AFOLU) and Waste sector.

The analysis of the historical trend of GHG emissions in the DRC shows that, during the period 2000-2018, national emissions are predominated by the "Forestry and Other Land Use (TF)" sector with nearly 86% of emissions, followed by the Waste, Energy and Agriculture sectors with 11%, 0.86% and 0.61% respectively. The AFOLU and energy sectors are the two largest sources of carbon dioxide emissions. The AFOLU and waste sectors are the main sources of methane emissions.

Figure 1 below shows that greenhouse gas emissions from the Forestry and Other Land Use sector were estimated at 529.22 MtCO2e in 2018. Emissions in 2018 are 36% lower than previously reported emission levels over the period 2010-2014 due to investments supported by various REDD+ initiatives and programs, including structural changes in forest management in the DRC. The AFOLU sector is systematically identified as the largest source of greenhouse gas emissions in the DRC.

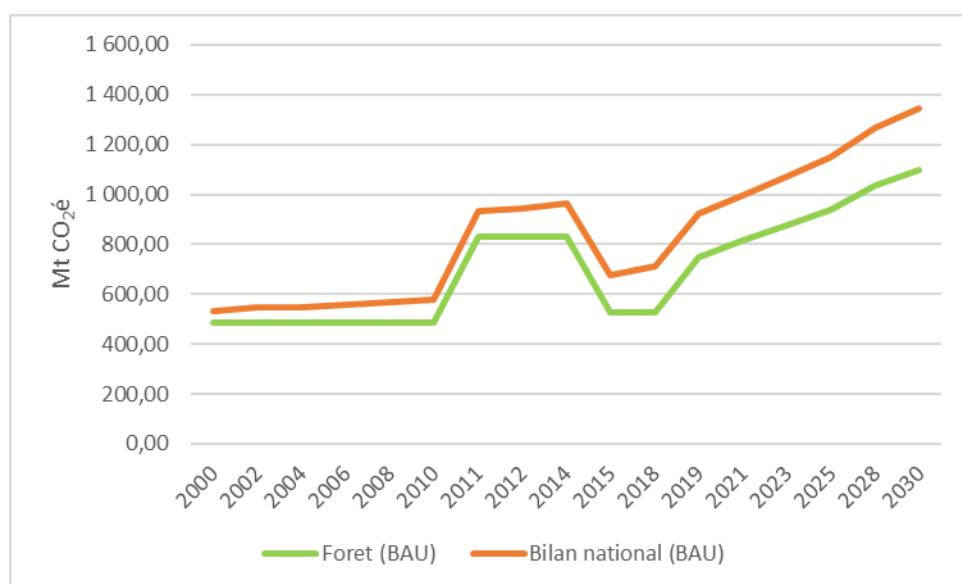


Figure 1: Historical and projected emissions at national and forest sector level

Considering the various measures identified at the national level, the reduction in GHG emissions is expected to reach nearly 21% by 2030 (Figure 2), while that attributable to the AFOLU sector is expected to reach 28% (Figure 3).

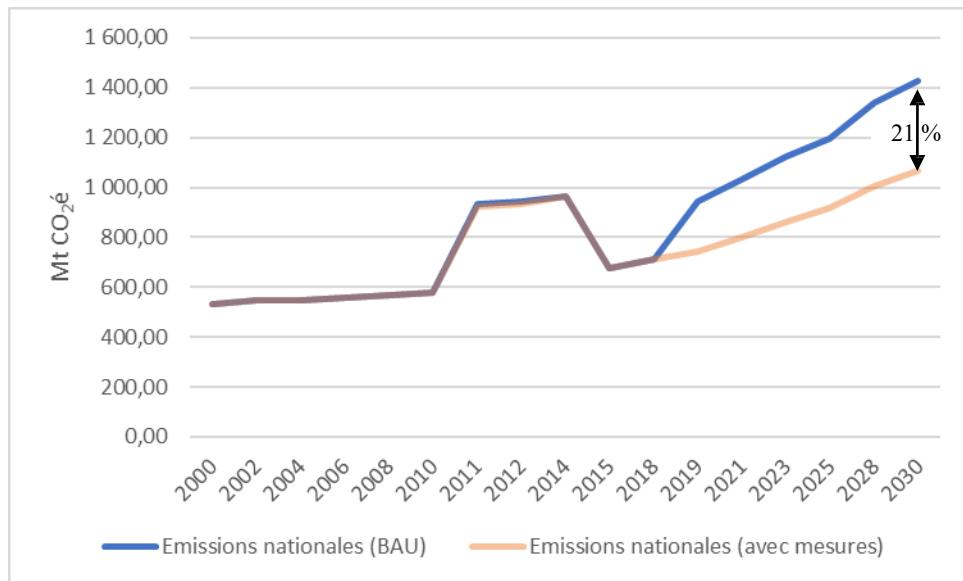


Figure 2: DRC GHG emissions, 2000-2018 and projected emissions (with measurements)

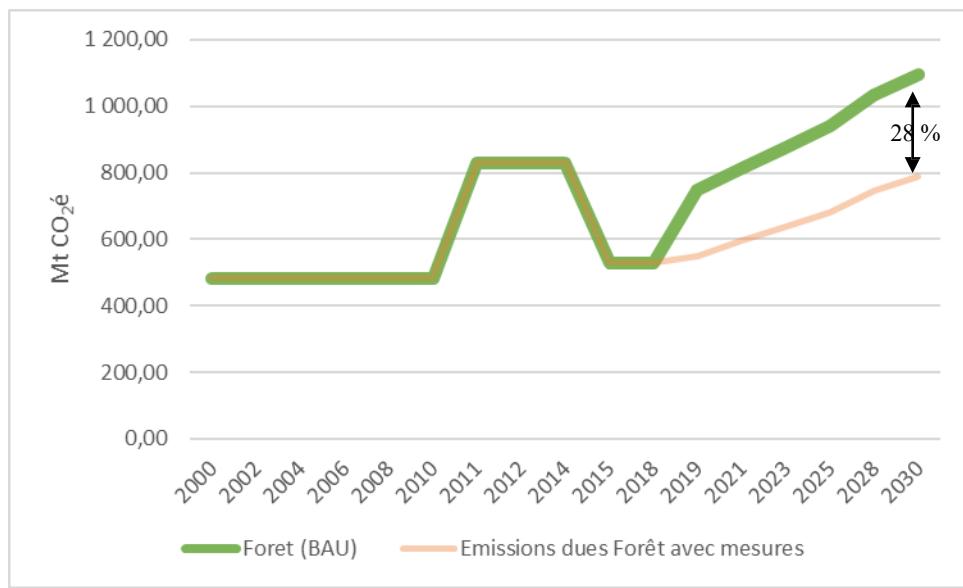


Figure 3: Emissions projection and reduction target to 2030

The waste sector is characterized by an increase in emissions attributable to (i) the disposal of solid waste (90.4%) of all kinds generated by households, communities and companies (shops, industries, construction, agricultural residues, etc.), (ii) the discharge of domestic wastewater (6.8%), and open air combustion. These emissions represent about 11% on average of all national emissions from 2000 to 2018.

The figures below show that emissions from the Agriculture, Waste and Energy sectors will decrease by 43%, 20% and 11% respectively by 2030. The full implementation of the various levers identified in these sectors would ultimately lead to significant reductions in emissions.

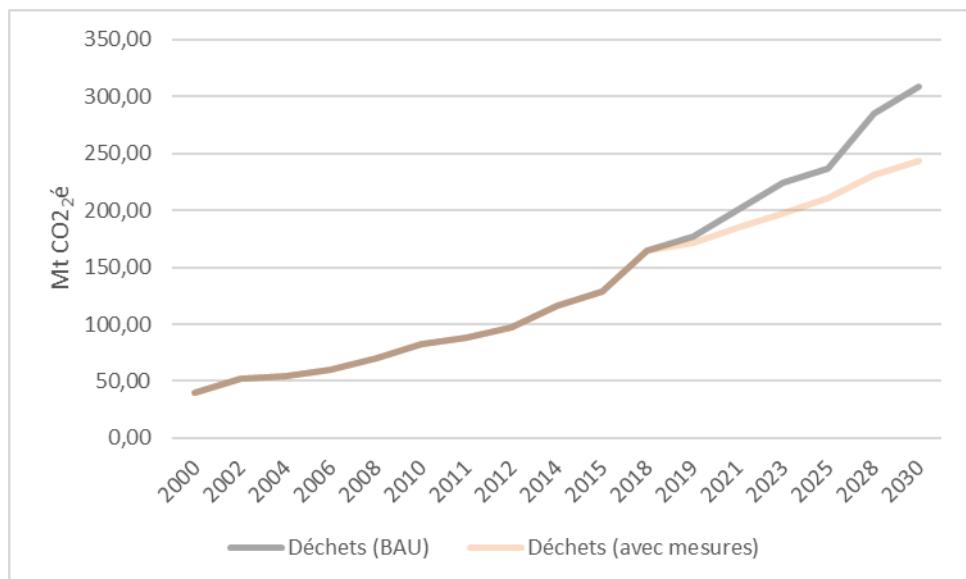


Figure 4: Emissions projections from the waste sector

Waste emissions from landfills will continue to decrease as more waste is disposed of preferably through other means, such as open burning, biological waste treatment, and recycling.

Although waste management is small-scale, the DRC's waste management policy encourages landfilling, which helps to advance this waste management policy. It should continue with small improvements in the efficiency of landfills and then extend to the recovery of these deposits of waste landfilled around major cities. As it is expected that the proportion of waste going to landfill will continue to increase even though emission reductions are expected to continue for some time, as emissions lag behind waste disposal.

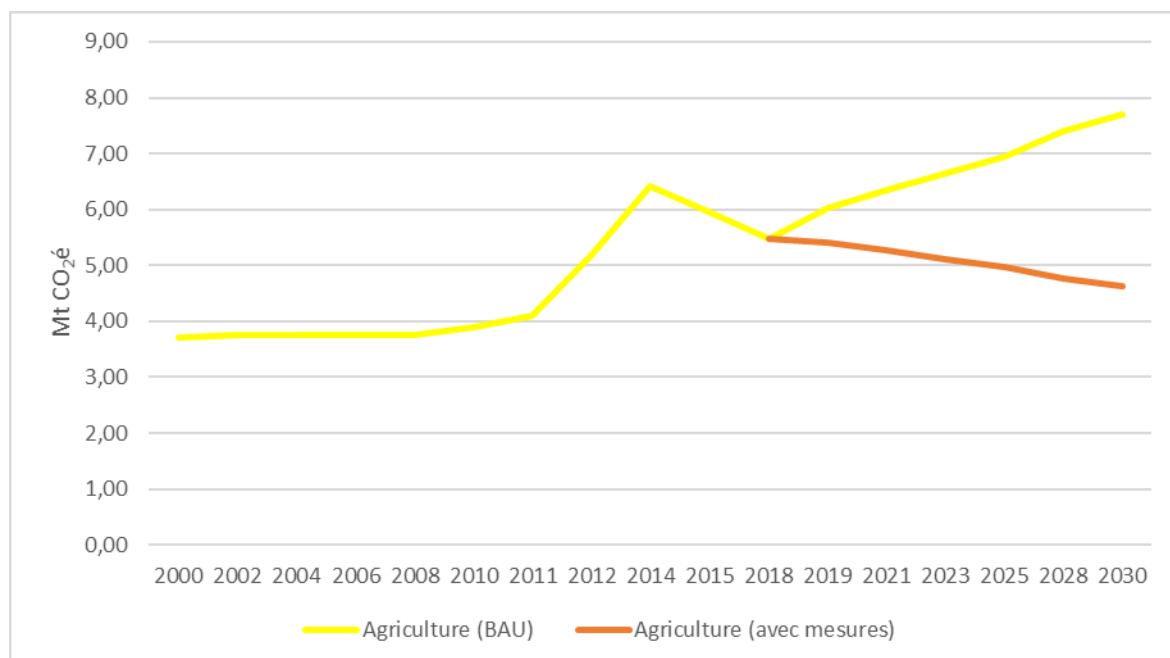


Figure 5: Emissions projections from the Agriculture sector

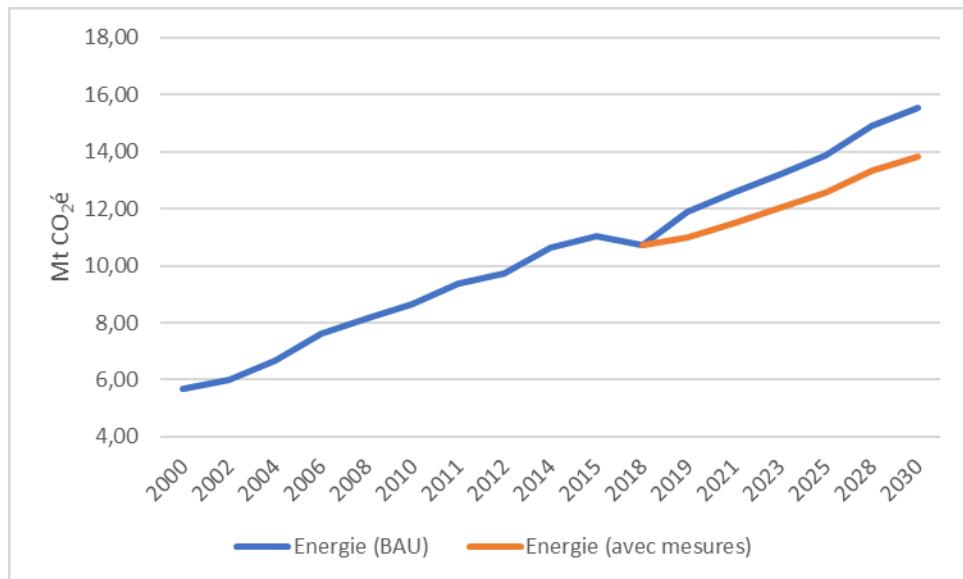


Figure 6: Evolution of emissions from the Energy sector

Contribution to adaptation

The DRC is vulnerable to the various impacts of climate change and lacks adequate capacity to deal with them. Indeed, the ND-GAIN index places the DRC as the 5th most vulnerable country to climate change in the world in terms of their adaptive capacity². The impacts of climate change are already being felt across the country, including persistent heat waves, heavy rains, land degradation, particularly erosion, longer dry seasons, increased drought patterns during rainy seasons, and floods.³

Climate projections in the DRC over the next few decades predict an increase in temperatures of around 3°C to 5°C by 2100, a decrease in rainfall and an increase in its variability, as well as an increase in extreme events⁴. These climatic variations will have a significant impact on the country's main economic sectors. The National Action Programme for Adaptation to Climate Change (PANA, 2006) has identified urgent and priority actions for adaptation to climate change in the water resources, forestry, agriculture and coastal zone sectors.

The National Adaptation Programme (NAP, 2021) process consists of integrating the adaptation dimension into national and provincial development planning by focusing on the following nine priority objectives:

- Managing forest ecosystems and biodiversity;
- Strengthening the resilience of the agricultural sector;

² <https://gain.nd.edu/our-work/country-index/rankings/>

³ Second National Communication, 2009.

⁴ <https://climateknowledgeportal.worldbank.org/>

- Managing climate risks in smallholder agriculture;
- Reducing disaster risks and protecting coastal areas;
- Ensuring the management of water resources and the sanitation of the environment;
- Strengthening the resilience of the health sector;
- - Guarantee access to energy for the population;
- Protecting energy production infrastructure; and
- Improve energy efficiency.

Fifty-two (52) priority adaptation actions are proposed in the table below. Based on reporting experiences at the global and country levels, the indicators have the potential to position the DRC's commitment and robust efforts to address the challenges of climate change adaptation.

Table 1: Priority adaptation actions

Sector	Nº	Actions	Estimated Cost (USD Billions)
Forest	1	Development of forest resource development projects with local communities and peoples by ensuring the application of legal provisions	1,15
	2	Reforestation of degraded areas with species of high ecological and economic value	1,61
	3	Development of agroforestry plantations in degraded areas	0,58
	4	Support for micro-projects for sustainable small-scale fisheries and fish farming	0,23
	5	Promotion of projects with a reduced impact on forest ecosystems with a view to diversifying the income of forest ecosystems. Populations	0,06
	6	Involvement of local populations in the management of forest ecosystems on their territory	0,06
	7	Valuation of the traditional knowledge of local people related to the conservation of ecosystems	0,06
	8	Strategic coordination of climate change adaptation programs, plans, initiatives	0,06
	9	Promotion of sustainable land management	0,50
Agriculture	10	Integrating climate change into planning and budgeting from all sectors to different Scales (National, Provincial and Local)	1,27
	11	Production and dissemination of climate-resilient seeds	0,92
	12	Development of a zoning programme to delineate the areas to be allocated specifically for agricultural activities	0,58
	13	Collection, processing and regular dissemination of climate data by INERA and METTELSAT with a view to Seasonal forecasts	0,23
	14	Extension of soil and water management techniques in agriculture	0,69
	15	Support for the structuring of farmers' organizations with a view to improving agricultural governance	0,29
	16	Support for the establishment of production and marketing chains for agricultural products with a view to improving Rural farmers' incomes	0,17
	17	Creation and rehabilitation of agricultural service roads	0,69
	18	Promotion of (i) cultural practices that allow the sedentarization of agricultural activities, (ii) seeds resilient, and (iii) soil and water management techniques in agriculture	0,23
	19	Rehabilitation and reinforcement of meteorological observation stations across the country	0,17
	20	Capacity Building for Women's Empowerment	0,23
	21	Development of alternatives to wood energy in order to protect the forest (solar, gas, or at least improved stoves, etc.)	0,17
	22	Capacity building to adapt to the impacts of climate change on agricultural production and production food security	0,06
	23	Support for research and innovation to strengthen the resilience of the agricultural sector to the effects of change	0,23

Sector	Nº	Actions	Estimated cost (USD billion)
		climatic	
	24	Creation of Agricultural Business Clusters and promotion of agribusiness	0,46
	25	Establishment of early warning systems	0,58
	26	Implementing response measures in the event of natural disasters	2,88
	27	Establishment of subsidy mechanisms for rural producers with a view to adopting new agro practices Ecological	0,23
Coastal area	28	Assessment of the vulnerability of coastal ecosystems and human and institutional capacity needs	0,58
	29	Establishment of early warning systems for coastal areas (floods, drought, soil erosion, landslides) of the field)	0,29
	30	Implementation of erosion control measures in the coastal zone, in particular the area between Banana and Nsiamfumu (26 km)	0,43
	31	Support for climate-resilient household income-generating activities	0,83
Water Resources	32	Development of educational and information programmes sensitive to disasters and climate risks	0,23
	33	Sanitation Strategy and Policy Development	0,01
	34	Preparation of water resources development and management plans by river basin	0,35
	35	Creation/Rehabilitation of water supply structures in villages	0,92
	36	Development and management of watercourses and rivers integrating environmental issues.	0,46
	37	Strengthening the resilience of rural communities to climate change through <i>school programmes and cleaned up villages</i>	0,35
	38	Integration of climate risks for the provision of sanitation infrastructure and services	0,22
	39	Production, management and dissemination of information on water resources and agro-hydraulic developments	0,06
	40	Improved access to safe drinking water and basic sanitation, as well as hygiene practices for Rural and peri-urban populations	0,23
	41	Improving access to sustainable waste management services and wastewater treatment	0,20
Health	42	Improvement of the accessibility of roads and public spaces and opening up of rural areas	0,32
	43	Construction/rehabilitation of health facilities	0,92
	44	Capacity building for access to basic health services for vulnerable populations	0,88
	45	Integration of the gender approach in the consideration of climate change issues	0,23
	46	Integrating Climate Change Impacts into National Health Sector Policies	0,06
Energy	47	Assessing health vulnerability and strengthening health system preparedness to respond to the Burden of disease due to climate-sensitive diseases	0,06
	48	Promotion of economic models to support renewable energies (solar, wind, biomass systems)	0,40

Sector	Nº	Actions	Estimated cost (USD billion)
	49	Improving energy transition modelling techniques towards energy-efficient models national and provincial levels	0,23
	50	Development of water retention basins, construction of dikes to protect production infrastructure electricity	0,35
	51	Promotion of the rational use of electrical energy, improvement of the management of the electricity network system, Energy Distribution	0,17
TOTAL			23,08

Measurement, Reporting and Verification (MRV) Framework

The successful implementation of the DRC's NDC requires an effective Measurement, Reporting and Verification (MRV) system, allowing the country to monitor the effectiveness of its mitigation and adaptation measures and facilitate its access to climate finance.

The DRC will develop a MRV framework in line with the requirements of the Paris Agreement that will enable the government to effectively monitor the progress of mitigation and adaptation activities identified in this updated NDC, in line with UNFCCC reporting standards, and will put in place an ongoing monitoring and evaluation framework to ensure that the country is making progress towards achieving its 2030 targets. This will be an indicator for each of the main emitting sectors, which could be used for international reporting as well as for national monitoring of the implementation of the NDC. This indicator framework will also monitor baseline emissions (BAU scenario) as well as emissions resulting from the implementation of NDC mitigation actions. The mechanism for monitoring climate finance flows will be established.

Figure 4 below summarizes the institutional arrangements for monitoring NDC implementation, including the national NDC MRV process.

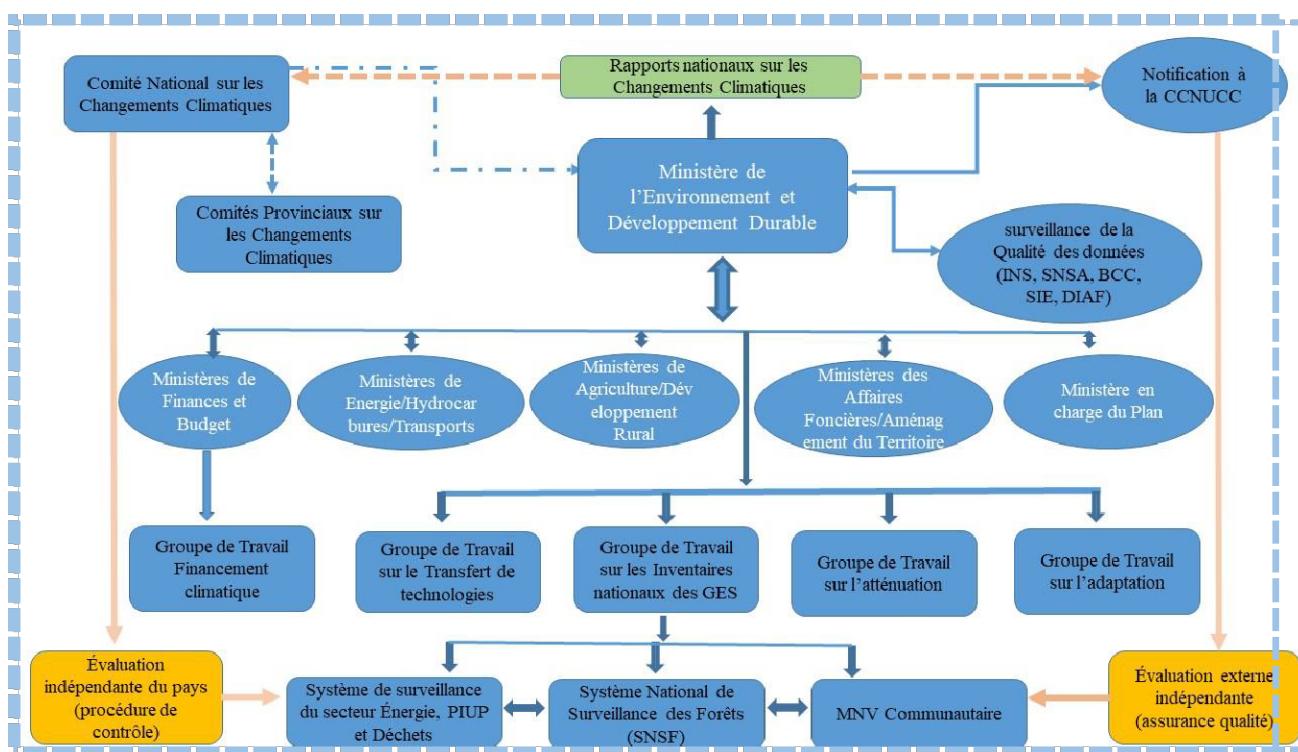


Figure 7: Institutional arrangements for monitoring the implementation of DRC's NDCs

Means of implementation

To achieve the conditional targets, the DRC expects financial, technological and capacity-building support from its technical and financial partners, global funds and bilateral/multilateral agencies and development partners.

These funds will be used to strengthen limited domestic resources and technical capacity to scale up climate action in the DRC.

The activities of the revised NDC will be implemented for 10 years (2021-2030) by integrating them into annual budget planning at the national or provincial level as various project and program grant policies.

The key elements of NDC implementation are:

- 1) Governance:** Key laws and regulations should be enacted and institutional capacities strengthened to facilitate the implementation of the NDC.
- 2) Finance:** A financing and investment framework for the NDC should be developed, as well as a strategy to streamline access to public finance while mobilizing private sector investment. This financing framework should facilitate effective access to international climate funds, including the Green Climate Finance Program.
- 3) The Institutional Mechanism:** The implementation of the NDC will be carried out under the leadership of the Ministry of Environment and Sustainable Development (MEDD), in collaboration with various relevant sectoral ministries at the local, provincial and national levels and other stakeholders, including youth, women and indigenous peoples.
- 4) Capacity building and technology transfer:** It will be necessary to identify capacity building needs at both the expertise and technological levels to enable the implementation of relevant policies and to optimize collaboration between key institutions and partners.
- 5) Gender equity, youth participation and indigenous peoples:** This aims to maximize the involvement of women, youth, indigenous peoples and other marginalized groups in the implementation of the various planned interventions, including in decision-making and benefit-sharing arising from the implementation of the NDC.
- 6) Communication:** It will be necessary to develop clear lines of communication between the different levels of governance (local, provincial, national and international) and between different sectors and stakeholders, including women, indigenous peoples and youth.

1. Introduction

1.1. National Development Context

1.1.1. National Development Goals and Plans

The Democratic Republic of Congo (DRC), straddling the equator, covers 2,345,409 km² and covers most of the Congo Basin, estimated at 3.7 million km². Its population is estimated at 91.994 million⁵ inhabitants, with a population growth rate of around 3.1%.

The DRC is committed to the 2030 Agenda and has adopted its National Strategic Development Plan for the period 2019-2023 (PNSD), which is aligned with the Sustainable Development Goals (SDGs). Indeed, through this PNSD, the DRC's vision towards emergence by 2050 is sequenced in three phases, namely:

- Reach middle-income status by 2028, GDP per capita increased to 1050 USD;
- Achieve emerging country status by 2040, with a GDP per capita of USD 4000;
- To join the club of developed countries in 2050, for a GDP per capita of 12,000 USD.

The PNSD, with its declinations at the provincial level, *Provincial Development Plan* (PDP), is based on five (5) main pillars below:

- Pillar 1. Enhancement of human capital, social and cultural development;
- Pillar 2. Strengthening governance, restoring state authority and consolidating peace;
- Pillar 3. Consolidation of economic growth, diversification and transformation of the economy;
- Pillar 4. Development of the territory reconstruction and modernization infrastructure; and
- Pillar 5. Environmental protection, the fight against climate change and sustainable and balanced development.

The environmental protection and climate change pillar is inherently cross-cutting and aims to integrate environmental issues and climate change concerns into all sectoral policies and strategies in order to achieve resilient and low-carbon development. Tropical forest conservation is a key issue in national efforts to reduce emissions from deforestation and forest degradation, including conservation, sustainable forest management and enhanced carbon sinks (REDD+).

The DRC has drawn up an inventory of the most common climate risks and threats due to climate change and has taken measures to address them. To this end, the Ministry of Environment and Sustainable Development coordinated the development of the Policy, Strategy and Action Plan to Combat Climate Change (PSPA-CC; revised version 2020). One

⁵ www.ins.cd (2021); INS, Statistical Yearbook 2017 of the DRC

The National Adaptation Plan (NAP), for the period 2022-2026, has also been developed. The main aim of this plan is to strengthen the country's resilience and the integration of climate change adaptation concerns into planning and budgeting at both the national and provincial levels.

The national sustainable development strategy and the government's action programme 2021-2023 are structured around 4 sectors with 62 priority areas of intervention including, among others: (i) governance and security, (ii) access to energy and drinking water, (iii) protection of the environment and natural resources (renewable and non-renewable), (iv) transport, (v) housing, (vi) the economy, (vii) education, training and health.

It should also be noted that other sectoral policies and strategies have been adopted to support government action. These include:

(i) Spatial planning policy and land tenure security

In order to promote a rational and sustainable use of natural resources that involves maintaining ecological processes, protecting biodiversity and adopting sustainable production systems, the DRC developed and adopted a national land use planning policy in 2020. This policy should lead to zoning and the definition of master plans for the optimal use of the territory, establishing sustainable human settlements and thus establishing a quality living environment.

In the land use plans, the DRC ensured the systematic integration of forest resources, including peatlands, in a transparent consultation process, in order to maintain consistency in the publication of all land use contracts (agriculture, forestry, mining, hydrocarbons). With regard to the forestry and other land use sector, taking into account the implementation of nature-based solutions, the DRC will ensure synergies with land use planning and land tenure security. In addition, in the area of land, the DRC has committed to conducting a legal review of land concessions of more than five hectares in pilot provinces.

(ii) National gender policy

In 2008, the DRC developed and adopted its National Gender Policy (NGP) and its Gender Strategy to integrate this dimension into sectoral development plans, particularly the Agriculture and Rural Development sectors, etc. Equality and women's empowerment remain a concern for the Congolese authorities. To this end, several efforts remain to be made to materialize this political will to improve the gender situation in the DRC.

(iii) National Agricultural Investment Plan (NAIP)

The DRC has developed its National Agricultural Investment Plan (NAIP), 2013-2020. Its overall objective is to stimulate sustained annual growth in the agricultural sector of more than 6%, which is essential to reduce poverty, ensure food and nutritional security for the Congolese population and generate sustainable jobs and income. This plan constitutes the unifying framework for all current and future programmes and projects in the agricultural sector. This document, which is currently being revised, constitutes the national framework for the planning of national and external funds for the agricultural sector and rural development.

(iv) National Energy Policy

Since 2009, the electricity policy has been technically validated by all stakeholders. Current efforts are focused on developing clean cooking strategies.

In 2014, Law No. 14/011 of 17 June 2014 on the electricity sector was promulgated. It establishes the liberalization and total opening of the electricity market to the private sector and also allows:

- the distribution of competing competences in the sector, between the State, the provinces and the decentralized local authorities; and
- the creation of a Regulatory Authority for the Electricity Sector and the National Agency for Electrification and Energy Services in Rural and Peri-Urban Areas.

(v) Youth policy

In 2009, the DRC developed its national youth policy based on 15 areas. It aims to protect Congolese youth from anything that may affect their education, health, integral development and development.

The 9th area of this policy, entitled "Youth, environmental protection and sustainable development", whose specific objective is to improve the living environment of young people, is based on three main axes:

- Educating young people in environmental protection;
- Improving the living environment of young people, including housing, drinking water, energy, sanitation; and
- The promotion of environmental protection and volunteerism among young people.

(vi) National Sanitation Policy (PONA)

The National Sanitation Policy (PONA), developed in 2013, aims to help improve the population's access to adequate sanitation services and infrastructure. Specifically, these include:

- Promote the sanitation sector to all stakeholders;
- Establish mechanisms for the mobilization of endogenous and exogenous financial resources in the sanitation sector;
- Improving the governance of the sanitation sector;
- Driving a change in sanitation mindset and behaviour;
- Harmonize the different approaches to the sanitation sector; and
- Promote the development and implementation of sub-sectoral programmes.

The Ministry of Environment and Sustainable Development (MEDD) through its Directorate of Sanitation (DAS) is responsible for the national sanitation sector, in particular municipal waste management, and is in this sense responsible for regulating this sector. Several ministries are involved in solid waste management. These include the Ministry of Infrastructure, Public Works and Reconstruction (MITPR) via the Office of Roads and Drainage (OVD) which intervenes in the cleaning of gutters, rivers and large collectors. Due to the dumping of waste on the roadside and in the sewers, the sanitary environment in low-income or poor residential areas is particularly poor.

1.1.2. Key socio-economic and environmental development challenges

Despite the development of numerous strategic documents and action plans in various areas, the lack of funding has limited the implementation of large-scale actions.

Most of the actions carried out in the field of environmental protection and the fight against climate change have been financed by different development partners, and have focused on the conservation of forests and biodiversity, by building capacity, including the development of planning tools, the sustainable management of natural resources and the strengthening of the resilience of ecosystems and communities.

In this area, the main challenges remain: (i) the mobilization of financial resources for the implementation of the main legal and institutional reforms; (ii) the development of the implementation text of the framework law on the environment in the DRC; (iii) strengthening intersectoral collaboration and coordination between the different sectors (mining, agriculture, forestry); (iv) the definition of a real policy in this sector, and (v) the definition of a real policy in the forest sector, and (v) the effective implementation of projects such as the Ibi Batéké project under the Clean Development Mechanism (CDM); the Carbonization Enhancement and Flaring Gas Recovery Projects in Muanda as part of the Nationally Appropriate Mitigation Measures (NAMA) process; and the formulation of the Low Carbon Development Strategy (LEDS), all planned.

On the economic front, it was noted that the DRC's economic growth rate continued to decline to 0.8% in 2020, exacerbated by the COVID-19 pandemic, from 4.4%

in 2019. However, it is reported that the growth of the mining sector increased by 6.9% in 2020 (compared to 1% in 2019). On the other hand, other economic sectors contracted by 1.6% (compared to 5.7% in 2019) due to restrictions due to the pandemic, the confinement of commercial activity and the limitation of public spending.

It is estimated that public spending in the agricultural and rural sector reaches 5.9%, which is still far from the Maputo criterion of allocating at least 10% of the national budget to the agricultural and rural sector, a target that is difficult for the DRC to achieve. The agricultural and rural sector employs nearly 70% of the country's working population. Moreover, its development remains essential for poverty reduction, as it is established that agricultural production would grow faster than the trend scenario adopted by the NAIP (2013-2020) which predicts that "if current trends are confirmed, the agricultural sector will continue to grow at a modest rate of 3% per year".

The efforts that will be necessary to accelerate agricultural growth (+6%/year) to lead the DRC to a balanced diet by 2025 (to feed 116 million consumers) will not be possible without a rapid modernization of agriculture. It will be necessary to double the cultivated area from 8 to 16 million hectares, which would represent an annual growth of about 6%, while the number of agricultural households is growing less rapidly (+2%/year) than the average population growth rate (+3%/year), characterized by a rapid rate of urbanization (+5%/year)⁶.

This sector contributes 38% to the formation of the GDP and participates for more than 60% in the creation of jobs. Although it is the main means of livelihood in rural areas, it fails to ensure the country's food independence and generate sufficient income and sustainable jobs. The agricultural sector is essentially characterized by rudimentary and itinerant slash-and-burn cropping systems for subsistence production, exacerbated by the scarcity of agricultural inputs, the isolation of production areas, in particular due to the degradation of rural roads, the growing impoverishment of the peasant masses, the lack of supervision and the impacts of climate change.

Despite the progress made, however, the fact is that:

- The DRC is in a precarious social situation that does not seem to have improved significantly over the past two decades according to the SDG7 report. It is characterized by the poverty of the population, contrasting with the immensity of the country's natural potential, which is more accentuated in rural areas with high population growth that weighs on the demand for social services, with an unequal distribution between the provinces;
- The DRC remains one of the countries with the lowest human development index among 175 countries, according to the 2020 Human Development Report. The proportion of the population not meeting the minimum level of calorie intake increased from 31% to 73% during the 1990s. Although it has subsequently decreased, food insecurity remains high and

(6) Agricultural Sector Study, Phase II, Agricultural and Rural Development Master Plan, Synthesis Document of Provincial Plans, Final Report, 2010.

(7) DRC, 2010. The following figures are taken from this report.

- currently affects about 76% of the population, while food accounts for 62.3% of the total expenditure of Congolese households⁸;
- The population's access to electricity remains very low: 9% at the national level (1% in rural areas, 30% in cities) while the average in sub-Saharan Africa is 24.6%;
 - Finally, unemployment, especially among young people (15-24 years old⁹), due to strong population growth, remains at a very high level - 18% at the national level - and particularly affects young people in urban areas (32%).

The many reforms undertaken and the strong economic growth recorded over the last decade show a significant improvement in the socio-economic conditions of the population, whose income comes mainly from the informal sector.

2. National circumstances

2.1. Geographical profile and natural resources

The DRC extends between 5°20' north latitude and 13°17' south latitude; and longitudes 12°15' and 31°15' east of the Greenwich meridian. It shares its 9,165 km of borders with nine countries including the Republic of Congo, the Central African Republic, South Sudan, Uganda, Rwanda, Burundi, Tanzania, Zambia and Angola, and nearly 40 km of coastline on the Atlantic coast. Under the revised constitution of February 2006, the Democratic Republic of Congo is composed of the City of Kinshasa and ten (25) provinces, each with legal personality (Figure 1).

Its relief is dominated to the east by two mountain ranges (Virunga and Mitumba) and a region of great lakes in the great rift and stepped plateaus determining in the center a large depression, the "Central Basin". It is covered by dense tropical forest, dominated by important wetlands and inland lakes (Tumba and Mai-Ndombe in the centre-west).

The Congo River Basin, the largest of the three (the Congo, Nile and Shiloango River basins), collects more than 80% of its water from tributaries (about thirty large rivers) of the Congo River, 4,700 km long, with an average flow of 41,000 m³ of water per second at its outlet in the Atlantic Ocean. There are also 15 lakes across the country that represent a total area of 180,000 km². Its dense hydrographic network benefits from a rainfall regime well distributed throughout the national territory.

⁸ DRC, 2011.

⁹ Jonas Kibala Kuma (2020), Poverty and Unemployment in the DRC: State of Play, Analysis and Outlook, p. 14



Figure 8: Administrative map of the DRC

Source: <http://rdc-snsf.org/portal>, MEDD, June 2021

The DRC's soils are very varied and represent about 227 million hectares. Their classification was carried out according to a morphogenetic system that combines morphological criteria that can be observed or measured on the profile with genetic considerations deduced from chemical, mineralogical, geomorphological, climatological and other observations. They are grouped into five main types (ferralsols, nitosols, gleysols, vertisols and andosols), the most dominant of which are ferralsols and nitosols (Figure 2).

In addition, the central basin of the Congo Basin, which includes the DRC and the Republic of Congo, is home to the world's great tropical peatland. This covers an area of nearly 145,000 km² with a significant carbon stock and a potential source of GHGs estimated at 30 gigatonnes, the equivalent of two (2) years of global greenhouse gas (GHG) emissions. The DRC alone has 2/3 of this peatland, i.e. about 101,500 km².

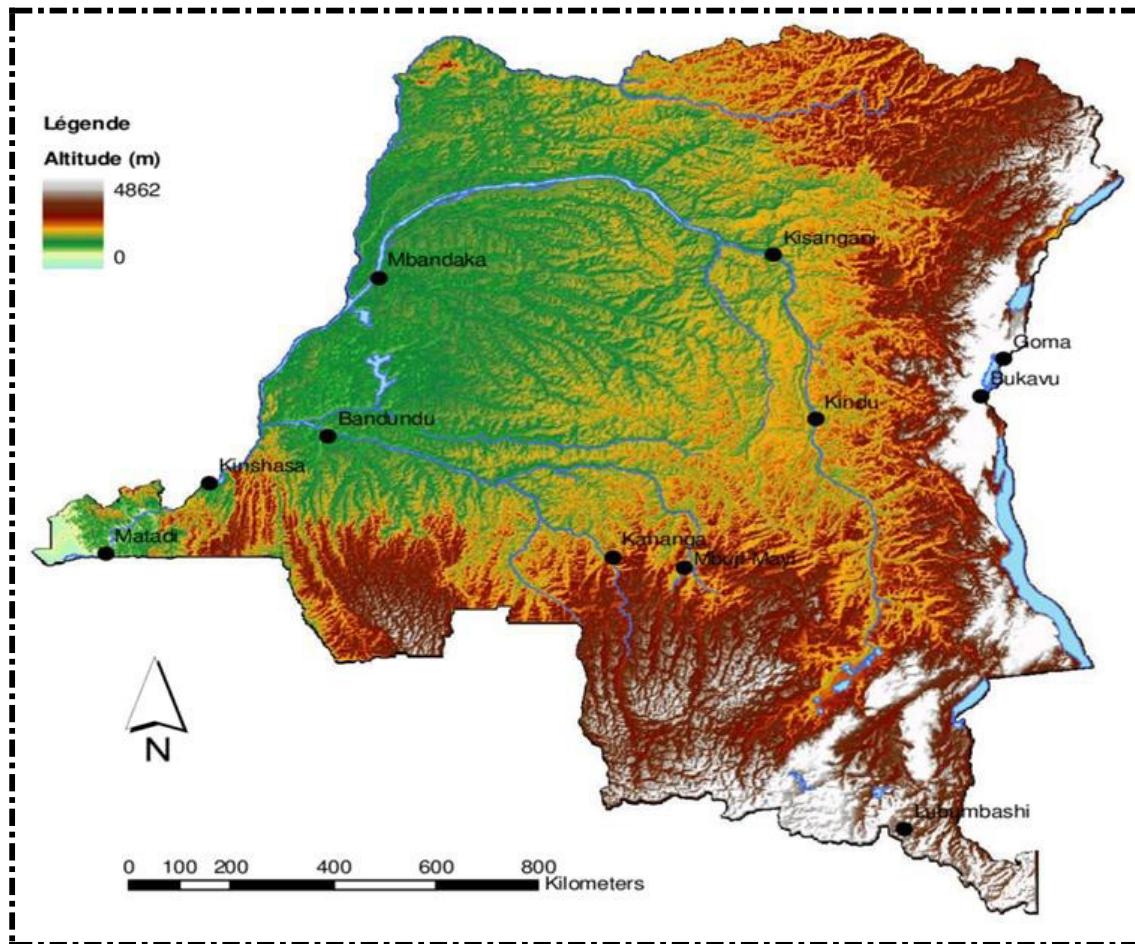


Figure 9: Relief of the DRC

Source: US Geological Survey, 2003

The DRC is endowed with immense natural resources, including:

- diversified subsoil wealth, such as uranium, copper, zinc, cobalt, gold, diamond, tin, columbite-tantalite (coltan), chromium, manganese, wolframite, silver, cadmium, lithium, coal and pyrochlore; etc.
- offshore oil on the Atlantic coast.
- A diversified floristic richness:
 - o about 152 million hectares of natural forests (10% of the world's total tropical forests and 67% of the national territory; dense humid forests covering nearly 99 million hectares, of which just over 83 million are at low altitudes) (De Wasseige et al., 2009);
 - o the vegetation is dominated by large formations including swamp, ombrophile, afro-montane, dry forests and savannahs;
 - o all phyla combined, have nearly 377 families, 2,196 genera and 10,324 species.
- significant wildlife richness (MEDD, 2013)¹⁰ characterized by:
 - o 352 species of reptiles, 33 of which are endemic; 168 species of amphibians,

¹⁰ Ministry of the Environment, Nature Conservation and Tourism, 2013, National Environment, Forests, Water and Biodiversity Programme "PNEFEB" -2nd generation

- 1086 species of birds, 23 of which are endemic;
- 421 species of mammals, 28 of which are endemic, and more than a thousand species of fish.

2.2. Climate profile

The DRC is located in the Intertropical Convergence Zone (ITCZ), which creates extreme climate variability in the country. It is characterized by a hot and humid climate over the largest area of its territory and abundant rainfall, with 140 to 160 days of rain per year. Its climate system looks like this:

- in the centre of the central basin, rainfall is between 1800 and 2200 mm per year with an average annual temperature of 27 °C;
- beyond latitudes 3°N and 3°S, we find the tropical climate with a dry season whose duration increases as we move away from the equator (4 months in the western part and plus 5 months in the southeast, where less than 1000 mm of rainfall is recorded per year);
- in the mountainous regions of the East, atmospheric conditions vary with altitude, where rainfall can reach 3000 mm per year and where the average temperature can drop by up to 1°C when the altitude rises by 180 m;
- in the coastal area, the driest climate is found (810 mm in Banana), where the effects of the cold Benguela current are felt.

The average annual temperature has increased slightly at a rate of +0.17°C per decade over the past 30 years. Looking ahead, projections from global climate models suggest a sharp average increase in temperature. For the end of the century, warming in the range of +1.7 to +4.5 °C (compared to the 1971-2000 reference period) is likely. In addition, a sharp increase in the duration of heat waves is expected as well as a sharp reduction in the duration of cold spells (Haensler et al., 2013)¹¹.

In terms of total annual precipitation, there has been no substantial change over the past 30 years. Looking ahead, the majority of climate models predict a trend towards a slight increase in total annual precipitation. For the end of the century, a change in total annual precipitation of the order of 0 to +8% (compared to the reference period from 1971 to 2000) is likely. In addition, projections suggest a trend towards more intense and considerably more frequent precipitation, while no clear trend is expected for the duration of drought periods (idem).

¹¹ Haensler, A., Saeed, F. and Jacob, D. (2013): Assessment of projected climate change signals over central Africa based on a multitude of global and regional climate projections. In: Climate Change Scenarios for the Congo Basin. [Haensler A., Jacob D., Kabat P., Ludwig F. (eds.)]. Climate Service Center Report No. 11, Hamburg, Germany, ISSN: 2192-4058.

2.3. Economic profile

Despite the immensity of its natural resources, the DRC still remains among the least developed countries, with nearly 70% of the population depending almost exclusively on agriculture and forestry resources for their survival.

About 67% of the national territory is covered by tropical forests, representing 60% of the Congo Basin forests and nearly 10% of this resource worldwide. The DRC is the second largest tropical forest country in the world.

The DRC has experienced several multifaceted crises since the 1970s that have spared no sector of national life. These repetitive crises have plunged the country into a serious economic and social situation which is, among other things, at the root of the population's state of widespread poverty and which ranks the DRC at the bottom of the Human Development Index (HDI), i.e. 179th out of 189 countries (UNDP, 2019).

2.3.1. Agriculture

The DRC has more than 80 million hectares of arable land, of which only 10% is currently exploited. The diversity of its climatic system and its large hydrographic network allow for a varied range of agricultural speculations. The expanses of savannahs, both grassy and wooded, are likely to support the breeding of more or less 40 million head of cattle⁽¹²⁾. This sector has suffered a long decline exacerbated by conflicts and the abandonment of large farms, agricultural productivity fell by 60% between 1960 and 2006.

Agricultural practice is essentially rainfed and peasant, with subsistence food production (self-subsistence) using rudimentary production equipment with low yields and low consumption of inputs. These farms are spread over more or less 4 to 7 million hectares and are organized by agricultural households, each farming an average of 1.5 hectares per year⁽¹³⁾.

The increase in production is due more to the increase in the area sown than to the improvement in yields. Unlike other systems on the continent, this mode of exploitation is not associated with livestock farming, which is a source of organic matter.

National livestock production comes mainly from small and large livestock and poultry farms. Their contribution is 34,5 % for pigs, 24 % for goats, 22,3 % for cattle, 15 % for poultry and 3,9 % for sheep⁽¹⁴⁾.

(12) Ministry of Agriculture (2009), Agricultural Policy Notes

(13) Ditto

(14) National Programme for the Revival of the Agricultural and Rural Sector (PNSAR) 1997-2001: monograph, Volume 1.

Small livestock and poultry have the advantage of providing farmers with products, on a regular and frequent basis, allowing them to maintain a certain level of income and improve their diet.

The DRC's annual fish production, estimated at around 220 000 tonnes on average out of an annual exploitable potential of 707 000 tonnes, or just over 30%, corresponds to an average annual availability of 5.2 kg per capita, which is significantly lower than the international standard of 13 kg per capita⁽¹⁵⁾.

2.3.2. Forestry and other land use

Congolese forests are spread out on both sides of the equatorial line and thus include a variety of ecosystems. Humid evergreen and semi-deciduous forests occupy much of the central and western regions, large tracts of edaphic forests grow in the north-west along the Congo River and its tributaries, while pre-mountain and montane forests extend over the eastern plateaus and slopes of the Mitumba Mountains. The richest and most contiguous forest massif (about 100 million hectares) is circumscribed in the central basin.

Estimated at about 152 million hectares of natural forests (MEDD, 2016), they represent about 10% of all tropical forests in the world and more than 62% of those in Africa. Its deforestation rate is estimated to be relatively low over the last 30 years, between 0.4% in 2001 and 0.32% in 2005, compared to that of other tropical forest countries (MEDD, 2018).

In order to combat illegal logging and preserve what remains of natural areas, the DRC adopted Law 011-2002 of 29 August 2002 on the Forest Code, which deals with land clearing, forest degradation and erosion problems. The code prohibits "any act of deforestation of areas exposed to the risk of erosion and flooding; any deforestation over a distance of 50 metres on either side of the watercourses and within a radius of 100 metres around their sources". In addition, the code specifies that "any deforestation must be compensated by reforestation equivalent in quality and area to the initial forest cover (...) and requires the obtaining of a deforestation permit for an area greater than 2 ha".

The forestry sector in the DRC is likely to contribute significantly to both the diversification and recovery of the national economy. Despite its enormous potential, the contribution of this sector to the reduction of poverty among the Congolese population is still timid or even insignificant. This is due, in part, to the fact that for several decades, the forestry sector has not attracted much interest from policymakers; This has not allowed this sector to benefit from all the attention to which it is legitimately entitled like other sectors of the national economy, in this case the mining sector.

⁽¹⁵⁾ Ministry of Agriculture, 2009, Agricultural Policy Notes, 71p.

2.3.3. Energy

The DRC is full of enormous potential, diversified in energy resources¹⁶ whose sustainable management is a major challenge that includes, among others:

- hydroelectric resources with an estimated potential of 110 GW (44% are concentrated in the Inga site alone, located in Kongo-Central Province) equivalent to 30 million tonnes of oil per year;
- biomass with about 152 million hectares of natural forests;
- mineral coal with reserves estimated at 720 million tons,
- oil with reserves estimated at 1.5 billion barrels,
- methane gas reserves in the Coastal Basin, estimated at 10 billion m³ at sea and 20 billion m³ in Lake Kivu (nearly 50 million Normal cubic meters (Nm³)),
- uranium ore with large reserves,
- geothermal resources;
- oil shales and asphaltic sands, the reserves of which are poorly known; and
- a solar potential with a solar band of between 3500 and 6000 Wp/m²/d

The PDGIE report (2018) shows that in terms of energy consumption, wood energy predominated, accounting for a share of 94.2% in 2018.

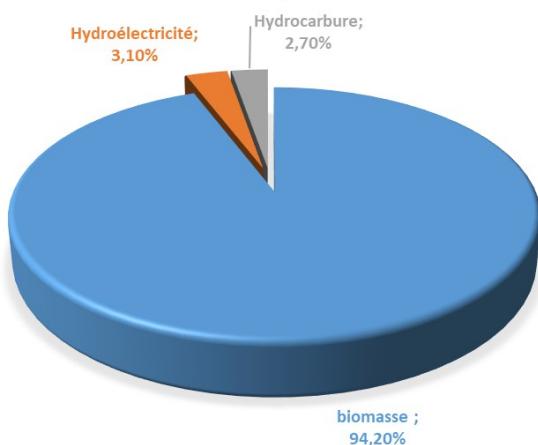


Figure 10: DRC's energy balance for the year 2018

Electricity production is largely provided by the National Electricity Company (SNEL) with an installed capacity of 2,456 MW. Some private independent producers such as Electricité du Congo (EDC) for the city of Tshikapa; SENOKI in Butembo, SOKIMO, Energie du Kasaï (ENERKA) for the city of Mbuji-Mayi, Electricité du Nord Kivu (ENK), Virunga Sarl, NURU Sarl, Caritas Développement..., and some self-producers such as the Sucrière de Kwilu-Ngongo, PERENCO, MIBA, Kibali Gold Mining, Gécamines certain religious denominations, the National Railway Company (SNCC), etc. total installed hydropower capacity of 364 MW. However, the population's access rate to electricity, one of the lowest in the world, is estimated at 9% (SE4ALL-RDC, 2019).

¹⁶DRC Renewable Energy ATLAS 2nd Edition 2016

2.3.4. Transport

The transport infrastructure in the DRC is among the least dense, dilapidated and impassable. In many provinces of the country, connectivity to the capital, Kinshasa, by road is difficult and most provinces are not connected to each other. Despite having one of the largest river networks in the world, inland waterway transport is often hampered by high levels of silting, long waiting times in ports due to inadequate infrastructure and governance.

Land transport in the DRC consists mainly of motorised road vehicles, as there is no appropriate infrastructure for non-motorised vehicles (i.e. cycle lanes, safe storage and convenient and affordable bicycle rentals) and the rail network is almost abandoned or destroyed. Motor vehicles depend mainly on personal passenger cars.

Vehicle fleet statistics up to 2015 indicate a total of 1.64 million vehicles registered throughout the country, mainly consisting of passenger cars (INS, 2015).

Public transportation includes public and private buses, minivans as well as exclusive and shared taxis, all operating without any coordination, resulting in very low occupancy rates. The market share of mass transport in the DRC is low due to the impracticality, lack of safety and limited scope of public transport compared to the attractiveness of owning a private automobile.

Driving habits in the DRC are characterized by a relatively low range with a high rate of congestion and frequent stops at short intervals of time. It is estimated that 50% of journeys have a distance of less than 10 km, 25% of stops are less than 20 seconds and the total stopping time per journey corresponds to more than 15% of the journey time.

In addition, these observations reflect continuous stop-and-go driving patterns, resulting in inefficient operation of internal combustion engines, and a consequent high rate of fuel consumption and pollutant emissions.

The DRC's road network comprises a total of 153,209 km (INS, 2014) of roads distributed as follows:

- 58,509 km of roads of general interest, of which about 3,000 km are paved.
- 7,400 km of urban roads;
- 87,300 km of local or agricultural roads

In terms of aeronautical activities, the DRC has nineteen (19) commercial airports, four of which are international airports in operation (Kinshasa/N'djili, Goma, Kisangani and Lubumbashi). At least eleven airlines (Congo Airways) and private airlines operate for passenger flights and cargo charters to all airports located in the DRC. In 2016, more than 1.77 million air passengers were counted compared to 1.61 million in 2010 (SDG Report, 2020).

As for river and lake activities, the DRC has nearly twenty service ports or functional commercial ports, including Matadi, Boma, Kinshasa, Illebo, Kalemie, Uvira, Goma, Bukavu, Kisangani, Mbandaka, Ubundu, Kindu, and Mushimbakye in Baraka, etc. These ports are mostly under the authority of the Congolese Transport and Ports Company (SCTP). The main ports in the southeast of the country are governed by the National Railway Company of Congo (SNCC).

The port of Matadi is the country's industrial entry and exit point. It is connected to the port of Kinshasa by road and railway. The port of Kinshasa receives about 78% of the boats coming from the interior of the country.

2.3.5. Industry

Although the industrial fabric of the DRC remains embryonic, this sector, along with agriculture, infrastructure, energy, health, education, housing and others, is a priority for the Government of the DRC. The industrial sector development strategy is mainly focused on the creation of Special Economic Zones (SEZs), agro-industrial parks and growth poles.

The infrastructure deficit is affecting the industrial development of the DRC, particularly manufacturing. The latter represented only 14% of GDP in 2018, or less than USD 12 per capita. This low level illustrates the obvious difficulties encountered by entrepreneurs, particularly in terms of access to electricity and public transport infrastructure (roads, railways, airports, river and lake transport). The repercussions speak for themselves, particularly in terms of economic competitiveness and jobs created. Employment in manufacturing accounts for less than 7% of total employment. The challenge for the Government is to continue to diversify the sources of growth and employment by proactively supporting this sub-sector and to improve the business climate to attract more foreign direct investment (FDI) (SDG Report, 2020).

As far as mining production is concerned, the DRC is "a geological scandal" as its mineral resources are important and diverse (copper, cobalt, colombo-tantalite, gold, diamonds).

An engine of growth and an important contributor to the national budget, the DRC's mining sector is one of the country's strategic sectors. According to statistics, from 2003 to 2017, mining production increased from 9,370 tons to more than one million tons of copper! This represents an increase of 10.75% (INS, 2017).

3. DRC's vision in the field of climate change

The DRC's vision for the fight against climate change is to promote a green, low-carbon economy that is resilient to the impacts of climate change, while rationally and sustainably managing its important natural resources to ensure ecological balance and the social, economic, cultural and environmental well-being of its population.

Indeed, the DRC, like all Parties to the UNFCCC, is resolutely committed to taking urgent measures to mitigate its greenhouse gas emissions and adapt to the effects of climate change, in accordance with the Paris Agreement, especially in its Article 4.^{Art. 17}.

To this end, the DRC ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1997, the Kyoto Protocol in 2005 and the Paris Agreement in 2017. In addition, it submitted its first three national communications to the UNFCCC to the UNFCCC in 2001, 2009 and 2015 respectively and its National Adaptation Programme of Action (NAPAs) in 2006. It also submitted its Forest Reference Emission Level (FREL) in 2018.

Although its greenhouse gas emissions are among the lowest in the world (MEDD, 2015), the DRC is highly vulnerable to the impacts of climate change. Therefore, adaptation to climate change is a major concern and priority for the country. The DRC's contribution to climate change in terms of greenhouse gas (GHG) emissions is relatively small, although emissions from agriculture, deforestation, land use, energy consumption, and waste make up a significant portion of its carbon footprint, to require appropriate climate action.

4. NDC Review Process

In 2015, the DRC submitted its Intended Nationally Determined Contribution (INDC) to the UNFCCC, setting out its adaptation and mitigation objectives. In 2017, it became its first NDC in accordance with the Paris Agreement.

This first NDC was based on the DRC's third national communication submitted to the UNFCCC in 2014, as well as other sectoral policies, such as the National REDD+ Strategy and Framework (MEDD, 2012) and other key national policy documents. The target for reduction, which is entirely conditional, was 17%, taking into account three main sectors , namely Energy, Agriculture and Forestry, associated with the following gases: CO₂, CH₄ and N₂O over the period 2021-2030.

This NDC, whose reduction target of 21% (conditional at 19%, and unconditional at 2%), updates and reinforces the first in terms of contributions to mitigation and adaptation, on the one hand, and through improved data collection, in-depth technical analysis and extensive stakeholder engagement on the other. It includes, in addition to the three sectors mentioned above (Agriculture, Forestry and Energy), that of Waste.

¹⁷ Paris Agreement, adopted by decision [1/CP.21](#)

4.1. Attenuation

4.1.1. Business-as-usual emissions (BAU) forecast

The mitigation contributions presented in this revised NDC are based on the prospective of a relative reduction in GHG emissions between 2018-2030 compared to the estimated baseline emissions using the 2006 IPCC guidelines¹⁸ representing the national trajectory in the absence of mitigation actions (BAU).

This requires the development of BAU sector forecasts of activities and associated emissions throughout the NDC's commitment period; Subsequent monitoring of progress against this baseline through the implementation of mitigation projects will require the continuous updating of the abatement scenario.

The projections used in this revised NDC are constructed through an extrapolation of emissions from the reference period of the first Biennial Updated Report and the DRC's national greenhouse gas inventories. This is a linear, simple, transparent, intuitive and easily reproducible projection in the medium term up to 2030, based on the IPCC's level 1 methodology, from which they will evolve according to a business-as-usual scenario.

Modelling specific to the energy sector, based on the Energy Demand Analysis Model (MAED-2 software, IAEA, 2007), was undertaken to estimate the current mitigation potential in this sector.

The MAED-2 software assesses future energy demand on the basis of medium- and long-term socio-economic, technological and demographic development scenarios. In this context, two scenarios have been developed: the BAU scenario and the abatement scenario. The model systematically links the specific demand for energy to produce different goods and services identified in the model, to the corresponding social, economic and technological factors that affect this demand.

For the other sectors, the BAU and abatement scenarios were constructed using linear modelling tools.

4.1.2. Modelling national emissions

As part of the implementation of the DRC's PNSD, three possible development scenarios were considered to characterize the possible developments in the economy: the continuity scenario also known as the normal course of business scenario (BAU), the scenario that reflects the government's vision (optimistic scenario) and the intermediate scenario between the first two, alternative scenario.

¹⁸ 2006 IPCC Draft Quote

(i) Continuity Scenario¹⁹

This scenario is based on a continuation of the current situation, in which the pace of economic growth is certainly high but suffers from fluctuations linked to the uncertain turns of the world markets. In light of the growth profile, the DRC will not be able to become an emerging country in 2030 and a developed country in 2050 if profound changes are not envisaged in the conduct of public policies. The reforms need to be deepened for more effective governance. Major transformations should be carried out at the level of the production apparatus, as well as a substantial increase in the quality of human capital.

The main assumptions on which this scenario is based are as follows:

- The mining sector continues to be the main lever of economic growth but sees its contribution gradually decrease;
- Agricultural activity continued to develop but its expansion was not very significant;
- The manufacturing industry continues to play a marginal role in economic growth and continues to suffer from foreign competition;
- The services sector continues to expand, mainly from wholesale and retail trade (against a backdrop of a deterioration in the current account) and transport and telecoms;
- Tax revenues from the exploitation of natural resources remain marginal;
- Progress has been made in the area of governance (political and economic), but it has been relatively slow and limits the total investment rate;
- The population continues to grow at an average annual rate of 3%, as has been the case for the last fifteen years, which implies that the total fertility rate (TFR) has hardly changed;
- Population movements due to conflicts are being absorbed and the social fabric is being rebuilt;
- The political and security situation in the country is stable as well as that of the Central African region.

(ii) Scenario reflecting the government's vision.

This second scenario is optimistic in that it aims to highlight the different efforts to be combined by the authorities. For the DRC to develop in 2050 according to the sequences defined by the government, it would be necessary to consider – courageously and relentlessly – a set of coherent and sustained actions over time to change its political, institutional, economic and financial landscape. Maintaining peace and strengthening the security of people and their property are two fundamental elements of the Government's efforts to put the country on a development path. At the macroeconomic level, inflation should be contained and the exchange rate should not experience major shifts. This would require a significant expansion of fiscal space

¹⁹ Vision of the DRC to 2050, (PNSD, 2016)

of the State, to improve the quality (or efficiency) of public spending, to constitute important budgetary stabilizers and to use them wisely, in the event of exogenous shocks.

(iii) Alternative scenario.

In this third scenario, described as an alternative, it is assumed that the country becomes a middle-income country in 2025 and emerging in 2030 instead of 2030. In 2050, the country becomes developed. This change in the time horizons of expected progress has an impact on the growth rates to be displayed by the economy as well as on the policies to be pursued. Despite the change in the length of the first phase of the trajectory, considerable efforts would be required for the DRC to progress as its government intends. At the macroeconomic level, it will be necessary to maintain rigour in the management of public finances and to have flexibility in the conduct of monetary policy, since growth performance requires inflation not to exceed 3.5% on average and an exchange rate whose slippage would not exceed 1.5%.

The main assumptions used to develop this scenario are as follows:

- Agriculture is undergoing major transformations and is becoming one of the main pillars of economic growth and job creation;
- The extractive industries continue to be dynamic thanks to a widening of the value chain and greater efficient exploitation of hydrocarbons;
- The construction and public works sector is experiencing remarkable expansion thanks to the combined efforts to expand the State's fiscal space and mobilize new sources of infrastructure financing (PPPs and viable sovereign loans);
- Manufacturing industries are growing at a steady pace and are managing to penetrate other markets;
- The tertiary sector remains dynamic thanks to the effects of reconstruction, modernization and infrastructure development;
- The structure of GDP is gradually changing (the secondary sector will become the main pillar of growth in 2050);
- Governance is experiencing rapid and sustained improvements against the backdrop of a coherent set of reforms affecting institutions and the functioning of the economy;
- Social policies are effectively implemented to lower the wealth tax and make the most of the demographic dividend;
- The return of displaced populations is possible;
- The political and security context is serene both in the country and in Central Africa.

Of the three scenarios of the PNSD, only the alternative scenario was taken into account in the energy sector and considered as the BAU scenario. The analysis used to develop this revised NDC involved the identification of a range of mitigation options (Abatement Scenario) within each of the NDC sectors for further consideration and quantitative analysis.

Scenario Dejection

This scenario aims to highlight the various efforts to be made by the DRC government to achieve a gradual and significant reduction in GHG emissions in the main emitting sectors.

The rebates used in this revised NDC are based on the assumptions below and reinforce it in several ways:

- In the field of forestry and other land use, the hypothesis is based on the REDD+ strategy, which was based on studies by McKinsey et al (2009)²⁰ and also on the assumptions envisaged in the NERF document, whose projections of the annual growth in emissions due to deforestation are estimated at 50 MtCO2e;
- In this forestry sector, we could achieve a cumulative reduction in emissions of 2.2 to 2.5 Gt CO2e by 2030;
- The share of emissions that cannot be reduced may be offset by the effects of afforestation and reforestation projects intended for carbon sequestration , up to an estimated cumulative sequestration potential of 1.2 to 1.4 Gt CO2e;
- By 2030, the combined effect of potential mitigation and sequestration levers could both offset the total estimated emissions of 410 to 700 Mt CO2e according to the BAU reference scenario, and constitute a carbon sink with a capacity of around 20 Mt CO2e;
- The BAU reference scenario of the evolution of degradation and deforestation in the DRC and related emissions was developed on the basis of 'voluntarist' assumptions of the country's socio-economic and demographic development. In this scenario, deforestation would reach 12 to 13 million ha by 2030, and degradation 21 to 22 million ha.
- In agriculture, it is planned to double the cultivated areas from 8 to 16 million hectares, to observe accelerated growth (+6%/year) and thus ensure a balanced diet by 2025 (feeding 116 million consumers) thanks to a modernization of the sector.
- In the Energy sector, mitigation efforts can be concentrated in the industrial, transport and residential sectors with the following assumptions:
 - Sharper reduction in the energy intensities of petroleum products, in the specific uses of electricity, in the use of heat. This reflects an improvement in the much more efficient energy intensity of the economy.
 - In the agricultural sector, the abatement will be much more concerned with the management of agricultural residues because the agricultural development programme provides for an increase in areas
 - In the waste sector, for the abatement scenario (organization of the sector: access of 60% of households to the waste management system, by developing operational mechanisms in at least 10 provinces.

²⁰ Methodology from the "McKinsey GHG Abatement Cost Curve V2.0", McKinsey & Company, 2009

4.2. Adaptation

For this adaptation component, the methodological approach consisted of an in-depth review of relevant documents on adaptation to climate change. The various national communications submitted by the DRC to the UNFCCC have enabled us to have a more or less broad overview of the degree of vulnerability of the various actors and economic sectors directly affected by climate change and disaster risks, as well as the measures proposed to deal with them.

Lessons learned from the NAPAs (agriculture, coastal zone protection, and women and children) provided an understanding of the relevance of the actions envisaged and the measures to be considered for greater effectiveness and efficiency in building resilience to the effects of climate change.

In addition, the results of the process of elaboration of the DRC's initial NAP and the various specific studies carried out for this purpose, including (i) the institutional assessment of the obstacles and needs for the integration of adaptation into development planning; (ii) the assessment of human capacity needs; (iii) the consideration of gender and Indigenous Peoples in the development and implementation of adaptation measures; and (iv) the opportunities for private sector involvement in adaptation finance, allowed for further reflection on the relevant actions envisaged in this NDC and the establishment of financing needs.

Finally, the selection of adaptation interventions, metrics including indicators, baselines, milestones and targets was carried out through workshops, followed by in-depth consultations with teams of sectoral experts through various iterative discussions with actors from different sectoral ministries and civil society delegates.

5. Contribution to mitigation

The DRC, a Party to the UNFCCC, has initiated efforts to implement activities that lead to emission reductions in accordance with its national circumstances and capacities. This section consists of a brief reminder of the analysis of the trend of greenhouse gas (GHG) emissions in the sectors whose measures are identified and proposes consequent mitigation strategies. It also presents other initiatives relating to greenhouse gas mitigation actions in the DRC.

The DRC's mitigation measures focus on the forestry sector, including the implementation of its national strategy to reduce emissions from deforestation and forest degradation (REDD+). In addition to the REDD+ strategy, the DRC's Nationally Determined Contribution presents some mitigation measures and actions in the energy, transport, agriculture and waste sectors.

However, to date, these few initiatives are less documented. However, the DRC has committed to improving its data collection and management system and formalizing the arrangements

Institutional measures that support the collection, analysis, processing and reporting of long-term information on mitigation actions and efforts to explore the associated co-benefits.

In addition, the DRC does not have a specific methodology and associated assumptions to assess the effects of the planned actions. Therefore, capacity-building for project proponents and different stakeholders is essential at the national level to improve the monitoring and reporting of sectoral mitigation activities.

5.1. Analysis of greenhouse gas (GHG) emission trends.

The revised 1996 IPCC Guidelines have been implemented for the estimation of GHG emissions reported in the DRC's three previous National Communications on Climate Change. The first Biennial Updated Report, on the other hand, is based on the IPCC's Tier 1 approach in accordance with the 2006 IPCC Guidelines and its improvements²¹.

The analysis of the historical trend in GHG emissions, carried out as part of the 1st Biennial Update Report of the DRC, which aims to be an emerging country by 2030 and this, in a vision of development towards an increasingly decarbonized economy, shows that, during the period 2000-2018 (Table 3), the country's emissions are predominated by the "Forestry and Other Land Use (FAT)" sector with nearly 86% of emissions, followed at a distance by the Waste, Energy and Agriculture sectors with 11%, 0.86% and 0.61% respectively.

Table 2: Evolution of the DRC's GHG emissions by sector for the period 2000-2018 (Mt CO₂-eq)

	Energy	PIUP22	Agriculture	Drill	Waste
2000	3,36	0,09	3,70	483,74	39,79
2001	3,69	0,11	3,86	483,74	51,47
2002	4,02	0,14	3,76	483,74	51,83
2003	4,35	0,18	3,76	483,74	53,08
2004	4,68	0,24	3,75	483,74	54,33
2005	5,01	0,29	3,75	483,74	56,49
2006	5,34	0,33	3,76	483,74	59,70
2007	5,67	0,34	3,77	483,74	64,28
2008	6,00	0,24	3,76	483,74	69,87
2009	6,33	0,27	3,76	483,74	76,94
2010	6,66	0,27	3,89	483,74	82,24
2011	6,99	0,26	4,09	830,53	88,61
2012	7,32	0,23	5,19	830,53	96,70
2013	7,65	0,25	5,73	830,53	106,47
2014	7,98	0,19	6,42	830,53	116,84
2015	8,31	0,23	5,97	529,23	128,87
2016	8,64	0,15	5,99	529,23	140,82

²¹IPCC 2019, 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Calvo Buendia, E., Tanabe, K., Kranjc, A., Baasansuren, J., Fukuda, M., Ngarize S., Osako, A., Pyrozhenko, Y., Shermanau, P. and Federici, S. (eds). Published: IPCC, Switzerland.

²² Industrial Processes and Product Use

	Energy	PIUP22	Agriculture	Drill	Waste
2017	8,97	0,15	5,70	529,23	152,82
2018	9,30	0,13	5,48	529,23	164,81

The trend of increasing GHG emissions from the non-forest sectors, i.e. energy with transportation, residential, and manufacturing, Industrial Processes and Product Uses (IPUPs), agriculture and waste treatment, is explained in Table 2 below:

Table 3: Contribution of non-forest sectors to the emission trend

Sector	Categories	Contributions to programs
Energy	Transport	The fleet of vehicles is mainly made up of second-hand vehicles but also, through the increase in Personal Vehicle Ownership
	Manufacturing	Sporadic commissioning of thermal power plants to compensate for untimely supply cuts of hydropower in industries
Agriculture	Enteric fermentation	Types of grass-based forages (fresh grass), methane emissions per kg of dry matter ingested vary relatively little. In fact, the most digestible forages emit more per kg of dry matter ingested than the least digestible forages, but they also provide more nutrients (volatile fatty acids).
	Agricultural management	Continuous increase in agricultural areas, more characterized by an increase in the number of farms, consisting of fellings in the forest area and along the main rivers in the interior of the country, all of which is linked to a high growth rate demographic
	Rice cultivation	Increase in the irrigated perimeter of rice and demand
Rubbish	Solid waste disposal sites	Linked to the increase in the population and the non-organization of the sector

Sector	Categories	Contributions to programs
Industrial Processes and Product Uses	The production of the cement	Increasing demand for real estate and the number of cement production units across the country
	The Lime from production	

The increase in methane (CH4) and nitrous oxide (N2O) emissions in the residential sector , due to population growth, is a result of the strong demand for wood energy, particularly to meet cooking needs in households.

5.2. GHG mitigation measures over the period 2021-2030

Given the development dynamics in which the DRC is committed to by 2030, its efforts will have to materialize in the implementation of various mitigation measures, mainly in the sectors of Forestry and Other Land Use, and Waste followed by Energy and Agriculture.

It is in this context that the DRC has developed its National REDD+ Framework Strategy and the Low-Carbon Development Strategy, for which two mitigation measures within the framework of the Nationally Appropriate Mitigation Actions (NAMAs) initiative have been identified in the Energy sector relating to the recovery of flaring gas from oil platforms. in Muanda, and on the improvement of carbonization techniques.

Also, the DRC intends to implement a national energy policy framework specifically targeting clean cooking strategies (LPG, electric stove, etc.), while combining with concerns about increasing the share of renewable energies in its energy mix, promoting energy efficiency, improving public transport, and energy recovery from waste.

Thus, the DRC commits to a combined unconditional and conditional contribution of 21% reduction in total GHG emissions compared to the BAU in 2030 (19% conditional and 2% unconditional) equivalent to an estimated mitigation level of up to 650 Mt CO2e by 2030.

The main levers of intervention identified relate mainly to:

A. Stream I : Forestry and Forest-Related Activities :

This component is expected to contribute between 182 and 192 Mt CO2e to the total mitigation potential of emissions in 2030 (McKinsey et al., 2009). This potential has been estimated by forestry activity as follows:

- i) **Legal industrial and artisanal exploitation** : about 19 Mt CO₂e thanks to the reduction of exploitation volumes per ha to sustainable levels of exploitation and very limited emissions (from 15 to 10 m³ per hectare).
- ii) **Illegal logging** : potential reduction of approximately 22 to 23 Mt CO₂e. This potential is broken down into several levers with regional specificities. The first concerns the eradication of illegal logging in neighbouring countries (Rwanda, Burundi, Uganda) through the strengthening of controls by 2030 in the provinces of North and South Kivu as well as the provinces of Tshopo, Ituri, Haut-Uele, Bas-Uele, and Kongo-Central. The second mitigation lever is to convert illegal logging for local markets into sustainable legal exploitation. The third lever is reforestation to sustainably supply lower-quality timber to local markets, mainly urban populations.
- iii) **Other degradation and deforestation activities** related to population activities (e.g. sustainable hunting) or the use of bush firefighting techniques.
- iv) **Afforestation** or afforestation: potential to reduce emissions by 61 to 65 Mt CO₂e in marginal areas (shrub savannahs and mosaics, savannahs, forests) of the order of 7 million ha.
- v) **Reforestation** : potential to reduce emissions by 80 to 84 Mt CO₂e in 4 million ha of degraded or deforested forests. In this context, the DRC plans to spatially identify these forests and integrate them into national legislation by 2025 and thus proceed with the establishment of at least 2.5 million hectares of local community forest concessions by 2025, following an approved good practice guide by 2023.

B. Part II : Agriculture and livestock farming in forests : four mitigation levers contributing 180 to 187 Mt CO₂e to the total mitigation potential (McKinsey et al., 2009):

- i) **Subsistence agriculture** : mainly shifting and slash-and-burn: potential to reduce emissions by 15 to 17 Mt CO₂e in 2030, based on a productivity improvement programme affecting 50% of food farms.
- ii) **Large-scale commercial agriculture**, mainly for the local market: potential reduction of about 65 to 70 Mt CO₂e, linked to the implementation of two types of programmes for the increase of productivity and affecting about 75% of farms. The first programme, which covers about 25% of farms, aims to set up extension programmes and provide inputs over a period of 20 years. The second programme aims to set up aggregation projects affecting 50% of the population.
- iii) **Intensive commercial agriculture**, mainly for export (palm oil, cocoa and coffee): potential reduction of about 80 Mt CO₂e. This reduction is the result of the relocation of new plantations that would have been established in primary forests to shrub savannahs or savannah-forest mosaics (resulting in deforestation of 1.6 to 3 million ha in the baseline scenario). Plantations rehabilitated on former sites (about 1.6 million ha) are not considered in this emission mitigation potential.

iv) **Livestock farming** : reduction potential of about 20 Mt CO2e.

As part of the Letter of Intent scheduled for signature between the DRC and the Central African Forest Initiative (CAFI) for the period 2022-2031, the DRC commits not to award industrial agricultural concessions in high-value forests (the definition of which will be developed through a national participatory process) and in peatlands; to orient agricultural development as a priority towards the savannahs.

C. Component III : Impacts of urban growth and industrial sectors on forests : a mitigation lever contributing 45 to 55 Mt CO2e to the total mitigation potential:

Reduction in the demand for unsustainable firewood, mainly for consumption by the urban population: about 45 to 55 Mt CO2e (McKinsey et al., 2009). This objective will be supported by the DRC's commitment in the Letter of Intent planned for signature with CAFI for the period 2022-2031, to reduce the share of unsustainable wood energy by 10% in two major urban centres by 2025 and by 50% in six major urban centres by 2031. Three programmes are likely to be developed, as part of the strategy, aimed at urban and **peri-urban** households: the first is based on the reduction of demand through the supply of improved or efficient stoves to about 5 million households (making it possible to reduce the consumption of firewood by about 50%). The second program aims to promote the use of hydroelectricity instead of wood energy by covering part of the electricity supply bill for 5 million households, located mainly in the southern provinces (Haut-Katanga, Tanganyika, Lualaba, Haut-Lomami, Lomami, Sankuru, Kasaï, Kasaï Central, Kasaï-Oriental). The third programme consists of afforestation of marginal areas around cities with the aim of ensuring the production and sustainable use of firewood through improved cookstoves.

D. Transport: Two mitigation levers contributing 27 to 37 Mt CO2e (McKinsey et al., 2009) to the total mitigation potential will focus on improving urban and interurban public transport while developing transport master plans and promoting multimodal transport for passengers and freight.

E. Waste management: two mitigation levers contributing 37 Mt CO2e (McKinsey et al., 2009) to the total mitigation potential. Four major actions are envisaged within the framework of the strategy, aimed at urban and **peri-urban** households: the first is based on the strengthening of the institutional and legal framework for waste management; the second will focus on a rational waste management programme; the third action will consist of an energy recovery programme based on the promotion of energy-efficient cooking aimed at the use of household waste biodegradable and biogas recovery from landfills; the fourth action will aim at the development of aerobic composting systems on a commercial scale; and the last will consist of the production of energy and organic fertilizer from solid waste, wastewater and sludge.

F. Nature-based solutions:

In response to UNFCCC concerns, the DRC has already been developing nature-based solutions²³ for decades. As an active player in environmental processes and contribution to global climate mitigation, the DRC has made commitments under various conventions. It follows that:

- a. At the end of the Convention on Biological Diversity, the DRC has already allocated 13% of its national territory to the erection of national parks, i.e. 30,483,180 Ha;
- b. Considerable progress is being made, with the DRC's commitment to restore 8 million ha of degraded land under the Bonn Challenge. In addition, there is the "1 Billion Trees" project, with the participation of young people, especially students;
- c. Under the terms of the Bali Conference of the Parties, with a focus on reducing greenhouse gas emissions and strengthening the forest carbon stock, the DRC's National REDD+ Framework Strategy aims to stabilize forest cover at 63.5%; The country is seeking an increase in its forest cover of 6.5%, or 15,242,500 ha.
- d. the Government of the DRC undertakes to secure the boundaries of protected areas and, where appropriate, to make any declassification for reasons of public interest conditional on the strict application of the legal framework in force²⁴. The Government is also committed to achieving, by 2030, the objective of at least 30% of national spaces under protection status, in different modes, as recognized by law (protected areas and their buffer zones, conservation concessions, areas dedicated by local communities to the preservation of forests in simple land use plans defined in a participatory manner, conservation series in forest concessions, restricted areas of management plans, etc.), according to the recommendations of the 30x30 initiative within the framework of the Coalition for a Grand Ambition²⁵, to which the DRC is a party.

The various landscapes of high conservation value that abound in the DRC are further proof of the ecosystem services provided by the DRC's forests to all humanity. To all these contributions are added peatlands as an important nature-based solution, thus enhancing climate ambitions as well as the country's contributions to policies, commitments and conventions. To this end, the mitigation measures foreseen for the Forestry and Other Land Uses sector in this document include wetland restoration, including peatlands used for agriculture and livestock, as well as peatland mapping and assessment.

If the in-depth studies confirm the scale of the peatlands of the Democratic Republic of Congo, their contribution in terms of nature-based contribution should raise the ambition of the

²³ According to IUCN (2016), nature-based solutions are "actions to protect, sustainably manage and restore natural or modified ecosystems, to directly address societal challenges in an effective and adaptive manner while ensuring human well-being and biodiversity benefits".

²⁴ Insert reference to the 2014 Act

²⁵ High Ambition Coalition – 30x30 Initiative: https://www.hacfornatureandpeople.org/coalition-de-la-haute-ambition-pour-la-nature-and-the-people-en#fact_.

national contribution. Indeed, preliminary estimates²⁶ made by Greifswald Mire Centre (Figure 4) show that, apart from the peatlands of the central basin on the map below, the Democratic Republic of Congo has other forms of peatlands that have not yet been assessed. This is the case for the peat bogs of the West Lowland Forest, the Atlantic Coast, the Albertine Rift Valleys and the Katanga Plateau.

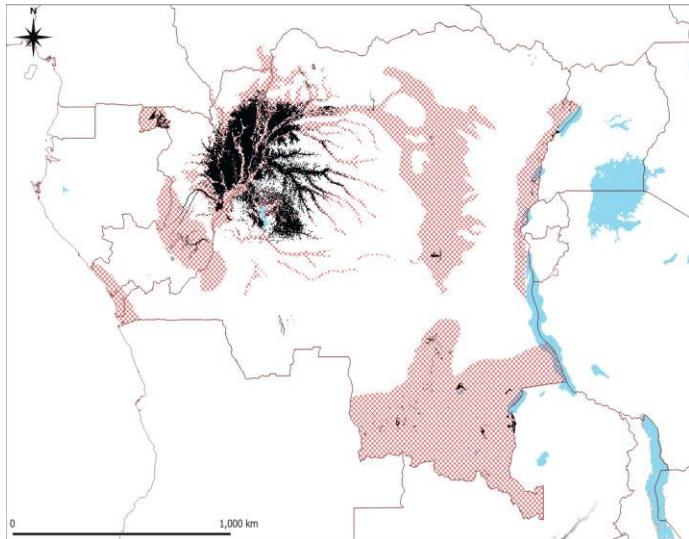


Figure 11: Extent of peatlands in the DRC

As the connections between peatlands and the various mechanisms that are the REDD+ strategy, the ongoing reforms particularly land use planning and land reform, are important, the DRC plans to:

- i. Clearly define the principles of legal protection and protocols for the overlapping of land uses in peatland areas in the National Peatland Strategy and/or include them in the ongoing land use planning reform;
- ii. Adopt clear peatland protection provisions in the planned revision of the Forest Code, capitalizing on the Sustainable Forest Management Programme (SFMP) and the DRC's new REDD+ investment plan for 2021-2030, as part of the National REDD+ Framework Strategy, supported by CAFI, with the objective of considering the high value of peatland forests in carbon sequestration and the provision of other ecosystem services of major importance;
- iii. Through the National Peatlands Strategy, clarify and implement, as far as possible, the commitments made through international conventions and initiatives for the protection and sustainable management of peatlands, including the Ramsar Convention;
- iv. Invest in strengthening national capacity and expertise, both institutional and technical, for sustainable peatland management;

²⁶The map below is an estimate made by Greifswald Mire Centre. The Democratic Republic of Congo will initiate a work of harmonization of the different maps with the data from the baseline study as well as the map produced by CongoPeat.

- v. Leverage the current interest in peatlands in the Congo Basin to advance the DRC government's current agenda and priorities for peatland enhancement and protection;
- vi. Define a Communication, Information and Education plan in connection with the national capacity building programme on peatlands;
- vii. Ensure a better connection between the National Peatland Strategy and the various international, sub-regional and national initiatives related to the management and enhancement of peatlands.

In addition to peatland restoration measures, the mitigation measures for the forest sector in this document are supported by other nature-based solutions. These include:

- Promotion of traditional and modern afforestation and reforestation techniques to preserve forests;
- Support for the development of community forestry as a tool for conserving biodiversity and combating the loss of forest cover in rural areas;
- Valorization of MEOR tools (Methodology for the Assessment of Restoration Opportunities) at the national level by integrating the valorization of traditional knowledge in the conservation of biodiversity around protected areas; and
- Support for initiatives enabling the establishment of the platform on forest and landscape restoration.

In implementing these measures, the DRC will build on the Global Standard for Nature-based Solutions.²⁷

Figure 4 below illustrates the emissions projections for the BAU Reference Case of AFOLU emissions, fully correlated with the national emissions balance. The graph shows that emissions more than doubled over the period 2010 to 2014, reaching 830.53 Mt CO₂. Between 2014 and 2018, there was a clear trend towards a reduction in emissions, in the order of 36%, which would be justified by the significant investments and structural changes (of measures and regulations) of management in the sector aimed at the drivers of deforestation and aimed at bending the deforestation curve. The year 2015 marked the start of the REDD+ implementation phase, commonly known as REDD+ Phase 2.

²⁷ [2020-020-Fr.pdf \(iucn.org\)](https://www.iucn.org/-/media/assets/iucn-global/our-work/nature-based-solutions/global-standard-for-nature-based-solutions.ashx)

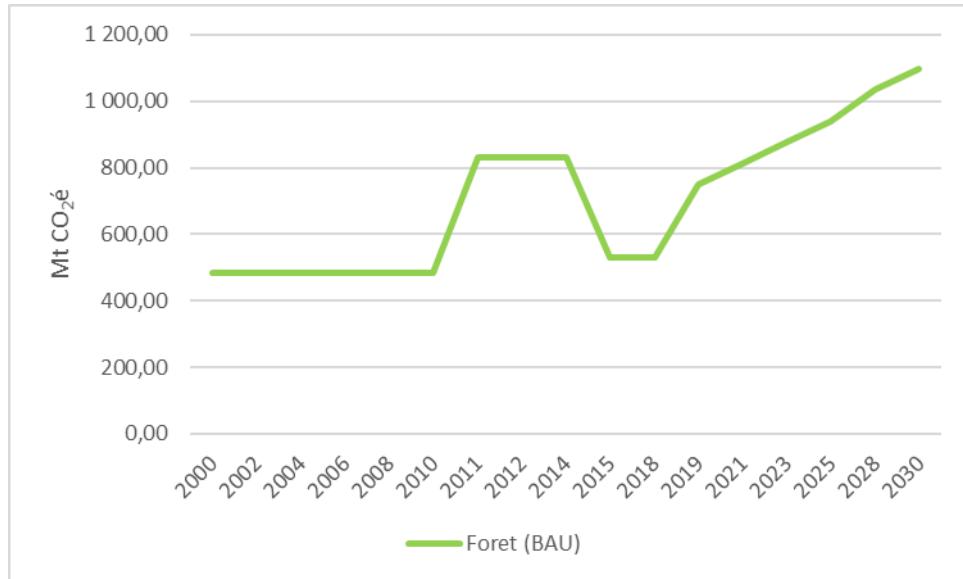


Figure 12: Projected emissions from the Forestry and Other Land Use (BAU) sector

The estimated GHG reductions in the AFOLU sector, targeted at 28% (Figure 12), is based on the 27 integrated mitigation actions by 2030 (Table 4).

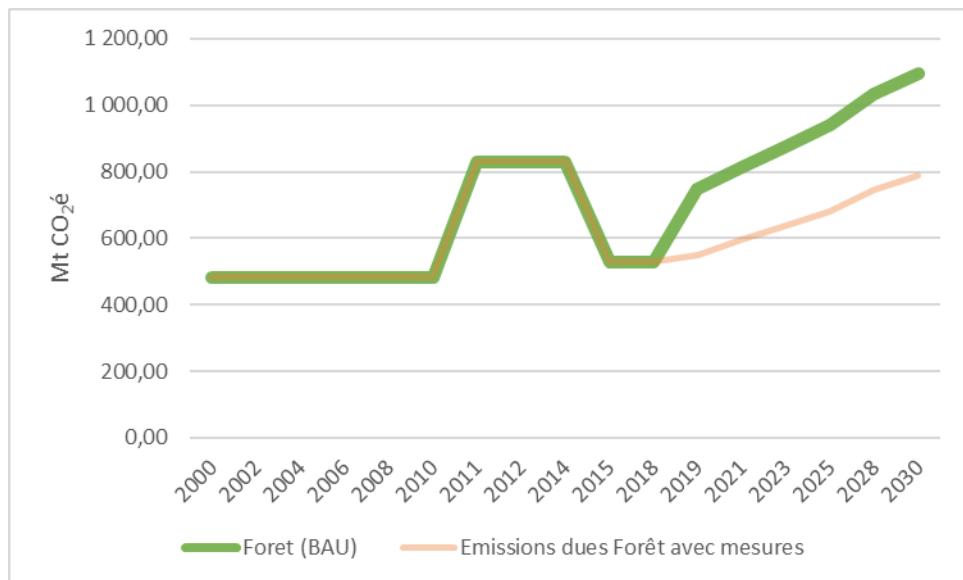


Figure 13: GHG reductions in the AFOLU sector

Figures 9 and 10 show the evolution of the emission projections of the Energy, Agriculture and Waste sectors over the same horizon in the BAU and with measured scenarios.

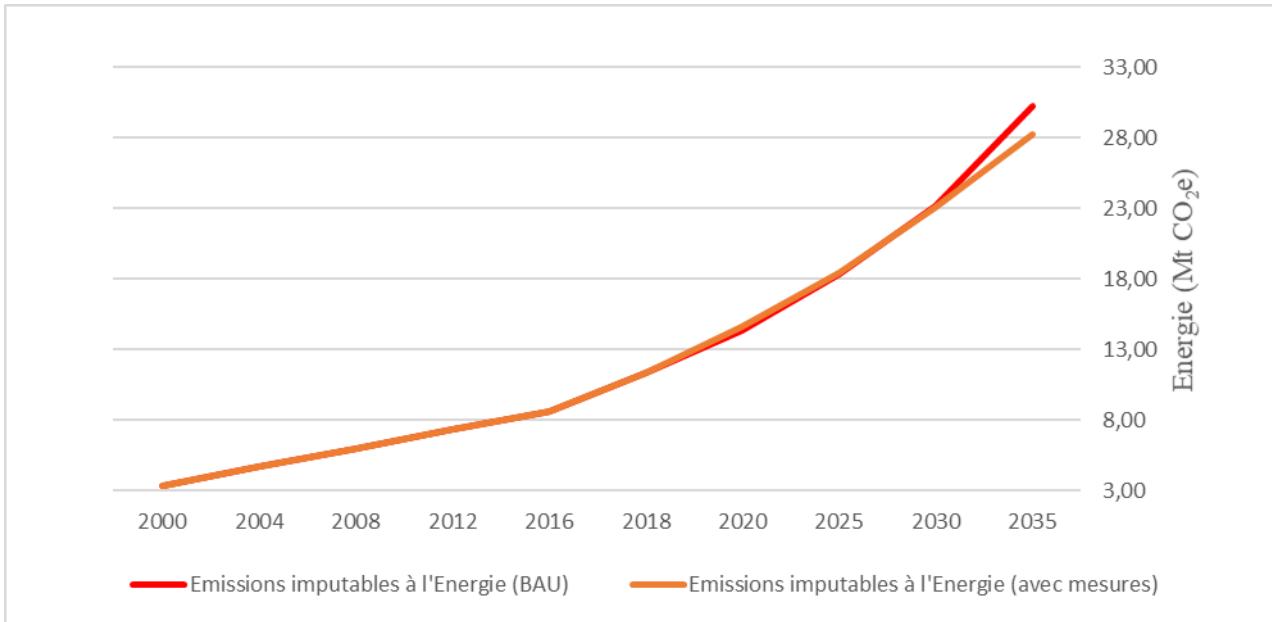


Figure 14: Evolution of emission projections from the Energy sector

The waste sector is characterized by an increase in emissions attributable to (i) the disposal of solid waste (90.4%) of all kinds generated by households, communities and companies (shops, industries, construction, agricultural residues, etc.), (ii) the discharge of domestic wastewater (6.8%), and open air combustion. These emissions represent about 11% on average of all national emissions.

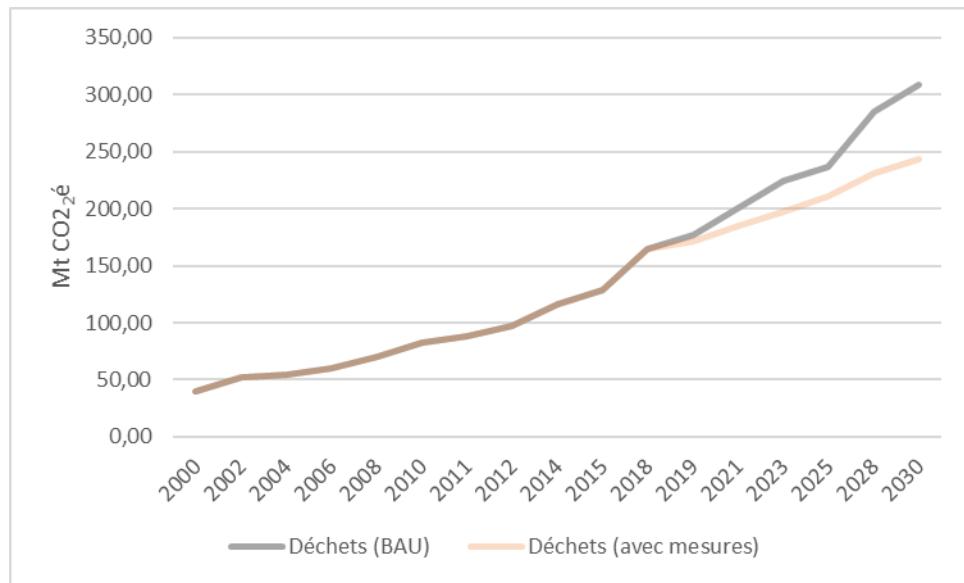


Figure 15: Evolution of emissions projections from the Waste sector

The full implementation of these different levers would ultimately lead to significant reductions in emissions.

Table 4 summarizes the interventions that the DRC intends to implement to achieve the 2030 reduction target.

Table 4: Summary of GHG Mitigation Options and Associated Estimated Costs.

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs			
Energy	Reducing the demand for wood energy and facilitating access to electricity	Rural electrification, peri-urban and urban by renewable energy sources	For hydropower from 3GW in 2020 to 4GW in 2030 For wind, solar, and geothermal from 2.9 MW in 2020 at 42.7 MW in 2030 8 to 10 units installed	74.2 to 94.6 Mt CO2e		1,95					
		Promotion of improved cookstoves and improvement of the carbonization	Increase from 12 -15% to 25 -30% efficiency 3 million households have the units of FA29								
		Promotion renewable energies	Amended Renewable Energy Act, 2014 Number of residences and institutions, manufacturing industries equipped with solar systems Photovoltaic			1,05					
						0,28					

²⁸ Estimated cost per tonne of CO2 equivalent to around USD 100 to USD 130

²⁹ Improved Stoves

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs
		Transition to the Energy-efficient cooking	Number of households using biogas, LPG technologies; and briquettes made from agricultural residues or household waste Biodegradable			0,63		
		Industrial plantations Wood energy	130,000 ha of plantations for energy purposes			0,18		
	Developing and improving urban and interurban transport	Promotion from transport mass	The 10 urban centres (cities and towns) with: traffic master plan; New public transport system (Bus, Rail, etc.); i) Number of road, rail (interconnection), river and lake transport routes built/rehabilitated ; j) Number of assembly units for new low-emission vehicles locally (in terms of the transfer of			1,1		

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs
			technologies)					
Agriculture	Sedentary agriculture	Promotion tec hnical itineraries aimed at the sedentarization of farmers, particularly in forested areas, y Got it we tlands	1 million ha of irrigated perimeters developed and equipped About 150 farmers' organizations and farmers' cooperatives established; i) Number of farmers using the guide to good agricultural practices for the management of fallow land, and the use of natural fertilizers; j) Number of awareness campaigns and agricultural extension per year	180 to 187 Mt CO2e (43%)		1,7		
		Integration of agriculture in the National Development Plan territory, developed in the stakeholder Implementation from the	Existence of: the policy land use planning; a national land use plan			0,2		

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs
		REDD+ strategy						
		Promotion of intensive agriculture In the Areas savannahs in order to limit the pressure on the Natural forests	1.6 million ha of land for intensive agricultural use developed Number of agricultural households using livestock waste and by-products in the form of biogas and natural fertilizers			1,33		
		Promotion of rational use and durable some Spaces of agricultural production for preserve agroecological conditions to ensure the stability of the forest cover				1,2		

	Intensification of food crop production (carbohydrates, oilseeds, pulses) in zone savannah and		1,3	
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs
		Degraded forest						
		Intensification of cash crop production in forest secondary and savannah, but with some sustainable agroforestry systems (cocoa, coffee, banana, special crops) from valorize Comparative advantages some peasantry for these crops	Number of new plantations of perennial crops and agroforestry in shrub savannahs or savannah-forest mosaics			1,3		
		Popularization and awareness raising on good practices	Number of awareness-raising campaigns and popularization of good practices per year			0,8		

	Development of Intensiv e livestock farming	Number of farms and agrosilvopastoral systems,		1,2		
--	--	--	--	-----	--	--

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs		
Forestry and other land use	Reduce deforestation and the Forest degradation	Promotion afforestation techniques and traditional and modern reforestation to preserve the Forests	760 thousand ha of restored forests 15% of 7 million ha of marginal areas reforested	182 to 192 Mt CO2e (i.e. 28%)		1,45				
		Support te développement durable et l'amélioration continue des pratiques forestières dans les zones rurales in Rural	Number of awareness campaigns and extension of reduced-impact logging (RFI)			1,5				
		Wetland restoration, including the peat bogs used in agriculture and breeding	Area of wetlands defended and/or restored			1,3				
		Valuation of tools MEOR (Methodology for the Evaluation of Opportunities for	Number of training, awareness and popularization			0,85				

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs
		Restoration) nationally by integrating the valorization of traditional knowledge in the conservation of biodiversity around the areas Protected						
		Support initiatives that allow the implementation of the platform on the Forest restoration and some Landscapes	Texts Establishing the Platform on Forest Restoration			1,2		

	Reinforcement of the forest governance, including The fight against illegal timber harvesting and dus Forest Resources in	Existence of a system for monitoring and combating fraud		1,2			
--	--	--	--	-----	--	--	--

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs		
Strengthening the carbon stock	supporter account some Studies, analyses and tools Products in implementation tevius identifyposes such as the APV-FLEGT	Sustainable management of timber harvesting				1,8		  		
	Sustainable management and rehabilitation of mining and oil operations	Area of the old mining operations and rehabilitated/restored oil companies in accordance with the management Environmental (PGE)				0,09				

	Bush fire control	Area under defence; Existence of surveillance and monitoring systems Bushfire Management Plan		0,11		 12 CONSO MPTION PRODUCTION RESPONSABLES	 13 LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES	 15 VIE TERRESTRE
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs
		Peatland mapping and assessment	Existence of a map for the rental of peat bog areas			0,52		 
Rubbish	Improving access to Waste Management Services	Reinforcement of the frame Institutional and legal for the management of waste	Existence from Texts regulating waste management	37 Mt CO2e		0,14		  
		Program of rational management waste				0,44		 
	Recovering waste	waste-to-energy (reduction of emissions from CH4 some Sites landfill)	Number of Kwh produced from landfill gas recovery Number of households with access to this technology			0,07		   
	Usage gas es from				0,29			

		m Landfills				
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Co-benefits of adaptation	Estimated cost (USD billion) ²⁸	Implementation period	Alignment with the SDGs
		Aerobic composting	Number of digesters available; Number of non-landfill and non-energy recovery plants in Different urban areas.			0,21		   
		Energy production and organic fertilizer from solid waste, Was tewater and sludge Fecal				0,21		    
Total						25,6		

5 Contribution to adaptation

6.1. Analysis of DRC's vulnerability to climate change impacts

The Democratic Republic of Congo (DRC) is vulnerable to the various effects of climate change and does not have adequate capacities to deal with them. Indeed, the ND-GAIN index places the DRC in 5th place in the world among the countries most vulnerable to climate change in terms of their adaptive capacity³⁰. The impacts of climate change are already being felt across the country, including persistent high heat, heavy rains, land degradation, particularly erosion, longer dry seasons, increased drought patterns during rainy seasons, and flooding.³¹

Climate projections in the DRC over the next few decades predict an increase in temperatures of 3°C to 5°C, a decrease in rainfall and an increase in its variability, as well as an increase in extreme events³². These climatic variations will have a significant impact on the country's main climate-sensitive economic sectors. The National Action Programme for Adaptation to Climate Change (PANA, 2006) identifies the water resources, forestry, agriculture and coastal zone sectors as the most vulnerable to the effects of climate change.

6.1.1. Climate Change Impacts, Risks and Vulnerabilities

6.1.1.1. Projection and evolution of precipitation and temperatures up to 2100

Climate vulnerability and risk assessment studies in the DRC, carried out as part of the implementation of PANA (2006), taking into account the popular perception in general as well as scientific considerations, have identified five major climate risks:

1. intense rain;
2. coastal erosion;
3. riparian flooding;
4. heat waves; and
5. seasonal droughts.

³⁰ <https://gain.nd.edu/our-work/country-index/rankings/>

³¹ Second National Communication, 2009.

³² <https://climateknowledgeportal.worldbank.org/>

6.1.1.2. Evolution of precipitation and temperatures up to 2100

Following the application of the MAGICC-ScenGen projections on the evolution of rainfall (rainy season) and the annual average maximum temperature, the four climatic zones were defined as presented in Table 4 (PANA, 2006).

Table 5: Climate zones

Zone	City/Landmark	East Longitude	South Latitude	Years	Rainfall (mm)	Temperature
I	Matadi	12-15°	5°-7°	2005	1100	25,2
				2100	850	29,1
II	Kinshasa	12.5°	2.5°-5°	2005	1800	25,0
				2100	1900	28,2
III	Kindu	17.5°	2.5°-7.5°	2005	1700	25,2
				2100	1630	29,1
IV	Lubumbashi	27.5°	7.5°-12.5°	2005	1100	20,4
				2100	900	24,7

Source : Second National Communication (2009:79)

Over the DRC as a whole, annual temperature changes indicate a gradual increase. On the other hand, the rains will experience two different situations: an increase especially in the Cuvette and a decrease in rainfall elsewhere with the shortening of the rainy season, as we move towards the extreme south, Katanga in particular would experience, in the long run, from 2020 – less than 5 months of rainy season compared to 7 currently.

6.1.1.3. Indicators of Exposure and Potential Impacts

Table 5 provides some details on the spatial and temporal distribution of exposure indicators and impacts.

Table 6: Inventory of the most common climate risks for the DRC

Risk	Impact	Loss of life	Duration (days)	Extent (km2)	Frequency (%)	Tendency
Rains Intense	5	2	3	4	3	↑
Seasonal drought	2	1	2	4	3	↑
Flooding Riparian	3	2	2	2	2	↑
Crisis Scorching	3	2	2	4	3	↑
Coastal erosion	5	1	2	2	2	↑

Spring; PANA (2006:16)

Legend : Estimates are calculated on a potential scale.

Impacts: 1 = \$1 per capita, 2 = S 10, 3 = S 100, 4 = \$1000, 5 = \$10,000

Loss of life: 1 = 1 person per event, 2 = 10 people,
3 = 100 people, 4 = 4,000 people

Duration: 1 = 1 day, 2 = 2 days, 3 = 100 days (one season), 4 = 1,000 days (more than one year)

Spatial extent: 2 = 10Km2, 3 = 100 Km2, 4 = 1,000 Km2

Frequency: 1 = 1% probability (some years), 2 = 10% probability, 3 = 100%

probability (annual)

Trend indicators: : average increase ↑ ; significant increase ↑

6.1.1.4. Climate change expected in the DRC

Another COMIFAC study confirms the trends expressed in PANA, based on the MAGICC-SCenGen model. This Congo Basin-scale climate change assessment³³³, based on a state-of-the-art multi-model and multi-scenario set used for global and regional climate change forecasts, indicates a robust increase in average temperature across the Congo Basin, independent of the baseline emission scenario. In addition to average temperatures, major variations in temperature extremes are also projected. With regard to total annual precipitation, the study does not reveal any major changes in the project area, once again, independent of the baseline emission scenario. However, variations in precipitation characteristics are to be expected. Forecasts of variations, in terms of the intensity of heavy rainfall, indicate a sharp increase over most of this area. Similarly, an increase in episodes of

³³³ Haensler, A., Saeed, F. and Jacob, D. (2013): Assessment of projected climate change signals over central Africa based on a multitude of global and regional climate projections. In: Climate Change Scenarios for the Congo Basin. [Haensler A., Jacob D., Kabat P., Ludwig F. (eds.)]. Climate Service Centre Report No. 11, Hamburg, Germany, ISSN: 2192-4058.

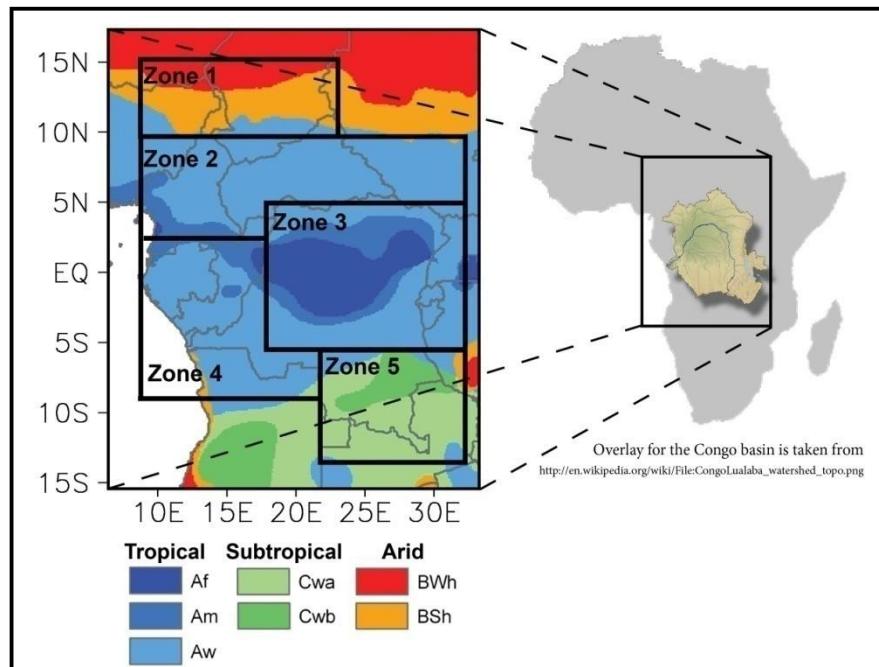
drought in the rainy season is very likely. All these changes could have a considerable impact on the region's agricultural and hydro-energy systems, even if the average annual availability of water resources remains constant.

Thus the climatic characteristics in this particular area, subdivided into five climatic zones (Table 6), three of which cover the DRC (Figure 7), show a lot of variation. For example, the rainy season which changes from the JJA (June-July-August) season in the northern parts to the DJF (December-January-February) season in the southern parts, and from a unimodal regime (North and South) to a bimodal regime in the center. In addition, climate change is predominant by and large, with humidity conditions in the center of the domain compared to the northern and southern bordering regions.

Table 7: Details of the five sub-areas

Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
9.5 to 15.0 N 8.0 to 23.5 E	2.0 to 9.5 N (West) 5.0 to 9.5 N (East) 8.0 to 32.0 E (North) 8.0 to 18.5 E (South)	6.0 S to 5.0 N 18.5 to 32.0 E	9.0 S to 2.0 N (West) 9.0 S to 6.0 S (East) 8.0 to 18.5 E (North) 8.0 to 21.5 E (South)	14.0 to 6.0 S 21.5 to 32.0 E

Figure 16: Distribution of climatic zones in the Congo Basin



Source: Haensler et al., 2013

The colors in the map highlight the different climates found in this region, ranging from tropical climate types in the center to arid regions even along the northern margins. The classification is based on the Koeppen-Geiger climate classification.

The Third National Communication (MECNT, 2014) shows that the impacts of climate change on current evapotranspiration and potential evapotranspiration, simulated by 2046-2065 using the PITMAN hydrological model for the Bukama reference station, show an increase of 10 to 15% compared to the historical reference period. In addition, the analysis of future rainfall trends at different time intervals (interannual and decadal) shows that there is a slight difference between the annual averages over the 2046-2065 and 2081-2100 horizons, which would reflect the trends in the variability of the historical reference period. However, it should be noted that there will be a significant disruption in the seasonal distribution of rainfall in the 2046-2065 and 2081-2100 periods. This change in the distribution of rainfall characteristics associated with rising temperatures will lead to an increase in extreme hydrological events, such as floods and droughts, gully-dwelling soil erosion and landslides, and disruption of aquatic ecosystem services; namely: providing domestic water, hydroelectricity, irrigation, navigation, etc.

As for the scenarios of sea level rise, in its analysis of the time series of sea level height over the coastal area from January 1993 to December 2012, Longandjo³⁴ shows a trend of sea level rise of about 2.2 mm per year, or a rise of about 4.00 cm over two decades

6.2. Adaptation and resilience priorities

The DRC developed a National Action Programme for Adaptation to Climate Change (NAPAs) in 2006. This program assesses risks and vulnerability to climate change impacts at the national level and identifies urgent and immediate adaptation activities that respond to current and anticipated adverse climate change impacts, including extreme events. The main sectors identified concern water resources, forestry, agriculture and the coastal zone. The process of identifying areas for urgent and immediate action has made it possible to select the following ten priority adaptation options:

- the electrification of urban and rural areas;
- the collection and drilling of water wells;
- the development of water reservoirs;
- the fight against erosion and flooding;
- the sound management of forest resources;
- the protection of coastal areas;
- construction and rehabilitation of communication routes (roads, railways and inland waterways)
- sedentarization in rural areas;
- strengthening the capacity of agricultural production; and

³⁴ Quoted by Fils, *National Strategy and Action Plan 2017-2023 for the Reduction of Natural Risks and Disasters in the DR. Congo*

- capacity building of national meteorological services.

The DRC has already made several efforts to implement urgent adaptation actions in the sectors of agriculture, community rehabilitation and coastal erosion control, particularly in the context of certain adaptation projects implemented in accordance with the areas of intervention identified in the NAPAA. Since 2014, a process of updating the NAPA guidelines and integrating the issue of adaptation into sectoral policies and strategies, following a participatory and multidisciplinary approach, has been initiated within the framework of the National Climate Change Adaptation Plan (NAP).

While the NAPA's aimed to identify urgent and priority actions in the area of adaptation to climate change, the NAP aims to integrate the adaptation dimension into national and provincial development planning by considering the following priority sectors:

- (i) Conservation of forest ecosystems and biodiversity
- (ii) Strengthening the resilience of the agricultural sector
- (iii) Climate risk management in smallholder agriculture
- (iv) Disaster Risk Reduction and Coastal Zone Protection
- (v) Strengthening the resilience of the health sector

6.2.1. Conservation of forest ecosystems and biodiversity

Adapting forest management to climate change will help secure energy supply and livelihoods. Conservation measures should be put in place in specific sites where ecosystems are at risk of degradation. Some actions may be taken, including:

- More effective inventory and monitoring of forests taking into account existing capacities. Various monitoring systems have already been developed. They can, however, be improved, taking into account the potential impacts of climate change;
- Conservation measures should be put in place in specific sites where ecosystems are at risk of degradation;
- Involvement of Local Communities and Indigenous Peoples in the negotiation of social clauses with forestry and mining operators;
- Raising awareness among the various actors involved in logging on violence and the human rights of men and women;
- Initiation of Pilot Projects on Non-Timber Forest Products (NTFPs) Sectors with Local Communities and Indigenous Peoples;
- Reforestation and domestication of species of high ecological, economic and cultural value, etc.

6.2.2. Strengthening the resilience of the agricultural sector

The following specific actions are envisaged to strengthen the resilience of the agricultural sector to the effects of climate change:

- Realization of a zoning for land use, with a view to delimiting the areas to be specifically allocated to agricultural activities;
- Promotion of sustainable good cultural practices, distribution of improved and resilient seeds to farmers and popularization of soil enrichment techniques;
- Support for the organization of marketing channels and a policy on the price of sales of remunerative agricultural products to producers;
- Supervision and support of farmers in their agricultural activities;
- Strengthening agricultural extension;
- Promotion of agricultural research;
- Development of tools and procedures for managing agricultural climate crisis situations;
- Multiplication of meteorological observation stations;
- Involvement of the State, as part of national solidarity, in the event of exceptional climatic accidents, to ensure compensation for risks;
- Subsidy for small peasant producers, who are increasingly vulnerable, with a view to adopting new agro-ecological practices capable of sustaining their farms;
- Selection of resilient varieties at the level of agricultural research centers and universities;
- Promotion of sustainable agricultural value chains;
- Establishment of strategic food reserves; development and dissemination of research products;
- Structuring farmers' organizations and improving agricultural governance;
- Integration of the gender approach;
- Human and institutional capacity building;
- Capacity building of farmers' organizations.
- Multiplication of meteorological observation stations;
- Establishment of a dynamic agricultural calendar for each crop with the involvement of agro-meteorologists and agronomists.
- The strengthening of individual and collective prevention efforts at the level of agricultural and technological research, the coherence of public support with prevention investments, the development of tools and procedures for managing agricultural climate crisis situations;
- The development of the capacity to pool risks, in time and space, with a large possible number of PA farms and others that are members of the mutual;

6.2.3. Climate risk management in smallholder agriculture

- Establishment of early warning solutions by: (i) improving people's access to multi-hazard early warning systems and disaster risk information and assessments; (ii) building partnerships around meteorological services related to rural women's early warning needs and drought; (iii) the identification of solutions to prevent agricultural landslides; and (iv) the development of intervention plans for the implementation of the early warning system for women in subsistence agriculture.
- Implementation of response solutions through hydroagricultural development and the mapping of programs for the implementation of agricultural water management technologies;
- Capacity building of extension workers, while taking into account the gender, in radio-rural stations for climate risk warnings;
- Use of agrometeorology to prevent climate risks.
- Subsidies for small-scale farmers, who are increasingly vulnerable, with a view to adopting new agroecological practices capable of sustaining their farms.

6.2.4. Disaster Risk Reduction and Coastal Zone Protection

- Analysis, evaluation and mapping of hydro-climatic risks;
- Vulnerability and capacity assessment;
- Monitoring and early warning of hydro-climatic risks (floods, drought, soil erosion (urban and agricultural), landslides, etc.);
- Preparation of information and communication documents on climate risks and their dissemination.
- Strengthening institutional and regulatory capacities for integrated management of vulnerable coastal areas;
- Implementation of coastal erosion control measures in the area between Banana and Nsiamfumu (26 km);
- Support for resilient income-generating activities and strengthening of the early warning system for coastal areas vulnerable to climate change.

6.2.5. Water Resources Management and Environmental Sanitation

- Additional dredging or widening, so that excess water flows freely.
- Adoption of river stabilization techniques in risk areas
- Improving the prevention of extreme weather events and floods (e.g.) through early warning systems and strengthening the resilience of water resources through innovations and changes in water resources.

water resource practices (construction of water supply structures in villages: wells, rehabilitation of springs, diversion of rivers, etc.).

- Improvement of access to safe water, sanitation and hygiene in rural and peri-urban areas;
- Support for the Healthy School and Village (EVA) programme, established at the national level by developing a strategy centred around the community and its needs and which gives families the opportunity to make informed choices while strengthening their resilience.

6.2.6. Strengthening the resilience of the health sector

Improving access to public health services for poor populations vulnerable to climate change by: (i) improving, building, rehabilitating and maintaining health infrastructure and equipment; (ii) improving people's access to basic health services in order to reduce risks.

6.4. Accommodation Implementation Plan

Table 7 summarizes the interventions that the DRC intends to implement to achieve its priority objectives of adapting to the impacts of climate change by 2030. The main sectors identified concern water resources, forestry, agriculture and the coastal zone.

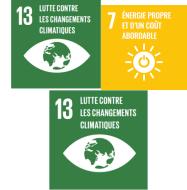
Table 8: Summary of adaptation interventions and their estimated costs

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
Forest	Manage in a sustainable way for forest ecosystems and biodiversity	Development of projects for the development of forest resources (NTFPs, community forestry, etc.) with Local Communities and Indigenous Peoples, ensuring the application of legal provisions	Number of projects implemented	-Job creation -Ecosystem protection		2021-2026	
		Reforestation of degraded areas with species of high ecological, economic and cultural value for communities	Area reforested	Restoration of degraded ecosystems	1,15	2021-2026	
		Development some plantations agroforestry in degraded areas	Area of areas occupied by agroforestry plantations	Restoration Degraded land	1,61	2021-2026	
		Accompaniment and support for sustainable fishing and fish farming micro-projects	Number of micro-projects implemented	-Job creation - Improved security	0,23	2021-2030	

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
				food and nutrition			
		Promotion of projects that reorient populations towards economic activities with a reduced impact on forest ecosystems	Number of projects implemented	-Job creation -Ecosystem protection	0,06	2021-2030	   
		Involvement of local populations in the management of forest ecosystems in their terroir	Number of People involved	-Protection ecosystems	0,06	2021-2030	   
		Valuation of traditional knowledge some Populations Local Related at ecosystem conservation	Type of Knowledge capitalized	-Protection of Ecosystems	0,06	2021-2030	   
		Coordination strategic programs, plans, initiatives related to adaptation to climate change	Existence of a coordination structure	-Reinforced rudder	0,06	2021-2030	   
		Promoting sustainable land management (SLM)	8 M ha to be restored and managed sustainably	Restoration of agricultural and forestry land	0,50	2021-2030	   

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
Agriculture	Strengthening the resilience of the agricultural sector	Integration of climate change concerns into sector planning and budgeting at all levels (national, provincial and local)	Number of development plans that take into account the integration of adaptation to climate change	Optimization of the use of natural resources and regulation of carbon and nitrogen cycles through agricultural production durable	1,27	2021-2030	
	Production and dissemination of climate-resilient seeds	-Number of seeds resilient to the effects of climate change Adopted	-Agricultural innovation and productivity		0,92	2021-2030	
	Development of the zoning program to delineate areas to be specifically allocated to agricultural activities	Area of areas to be specifically assigned to activities Agricultural	Optimization of the use of natural resources		0,58	2021-2030	
	Collection and processing of climate data by INERA and METTELSAT and regular dissemination of weather and seasonal forecasts	Number of weather and seasonal forecasts Published	- Innovation and productivity - Enhanced climate knowledge		0,23	2021-2030	

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
		Extension of soil and water management techniques in agriculture	-Number of people affected -Rate of return per speculation	Sustainable management/restoration of degraded soils	0,69	2021-2030	
		Support for the structuring of farmers' organizations and agricultural governance	Percentage of target population, disaggregated by sex, age and province	Reinforced agricultural rudder	0,29	2021-2026	
		Support for the organization of marketing channels and a price policy for the sale of remunerative agricultural products to agricultural producers	Percentage of Target Population	Reinforced agricultural rudder	0,17	2021-2026	
		Creation and rehabilitation of Agricultural services	Number of kilometres of service roads created and rehabilitated	Distribution and Efficient resource uses	0,69	2021-2030	
		Promotion of (i) farming practices that allow for the sedentarization of agricultural activities, (ii) improved and/or resilient seeds, and (iii) soil and water management techniques in agriculture accessible to farmers	-Number of cultural practices -Number of seeds improved and/or Resilient	- Innovation and productivity	0,23	2021-2030	

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
		Development and dissemination of weather observation stations across the country	Number of weather observation stations installed	Reinforced agricultural rudder	0,17	2021-2030	
		Reinforcement the Capabilities and Women's empowerment	Number of women who have benefited from capacity building	Capabilities human and institutional services	0,23	2021-2030	
		Development of alternative energies wood energy in order to protect the forest (solar, gas, or at least improved stoves, etc.)	Number of Types of Alternative Energy Developed wood energy	Protection of Ecosystems	0,17	2021-2030	
		Capacity building to adapt and manage the impacts of climate change on agricultural production and food security	Number of households benefiting from capacity building	Strengthened human and institutional capacities	0,06	2021-2030	
		Support for research and innovation to strengthen the resilience of the agricultural sector to the adverse effects of climate change	Number and type of support provided to research and innovation	Innovation and productivity	0,23	2021-2030	

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
Agriculture	Insure the management of climate risks in smallholder agriculture	Creation of Agricultural Business Clusters (PEA) and promotion of agribusiness	Number of businesses created	Job creation	0,46	2021-2030	    
		Setting up warning systems precocious	Number of Intervention Schemes for the Implementation of the Early Warning System for Women in Subsistence Agriculture Developed	Innovation and productivity	0,58	2021-2030	  
		Implementing response measures in the event of natural disasters	- Number of hydro-agricultural developments carried out - Number of water and land conservation programs (control anti-erosion) developed	Innovation and productivity	2,88	2021-2030	  

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
		Development of subsidy mechanisms for small-scale farmers, who are increasingly vulnerable, with a view to adopting new agro-ecological practices capable of sustaining their farms	Number of smallholder farmers who have benefited from subsidies	Job creation Distribution and use of efficient resources	0,23	2021-2030	  
Coastal area	Reduce Disaster Risk and Protecting Coastal Areas	Assessment of vulnerabilities and human and institutional capacity needs	Number of studies conducted on human and institutional vulnerabilities and capacity needs	Strengthened human and institutional capacities	0,58	2021-2026	   
		Strengthening of the early warning system for vulnerable coastal areas and areas of hydro-climatic risks (floods, drought, soil erosion (urban and agricultural), landslides, volcanic eruption, etc.)	Number of early warning systems for vulnerable coastal areas and areas of hydro-climatic risks Installed	Innovation and productivity	0,29	2021-2030	  
		Implementation of coastal erosion control measures in vulnerable coastal areas, including the area between Banana and Nsiamfumu (26 km)	Number of measures to combat coastal erosion in	Preservation of natural areas	0,35	2021-2030	 

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
			the coastal areas set up between Banana and Nsiamfumu (26 km)				 
		Protection of erosive zones through the use of appropriate erosion control techniques	Area of erosive zones protected by the use of erosion control techniques Adapted	Preservation of natural areas		2021-2030	  
		Support the activities resilient household income generators	Number of people/households that received support for IGAs	-Job creation -Ecosystem protection	0,16	2021-2030	  
		Education, Information and Awareness on disasters and climate risks.	Number of Communication plan implemented	Optimization the use of natural resources	0,75	2021-2030	    
Resources in water	Manage the water resources in a sustainable manner and Sanitize the	Development of the strategy and the law on sanitation	Number of Elaborate sanitation laws	Rudder Strengthened climate	0,23	2021-2026	  
					0,01		

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
Water Management	middle	Development some Schemes for the development and management of water resources by basin or sub-basin	Number of water development and management schemes by basin or sub-basin	Reinforced climate control	0,35	2021-2026	
		Creation/Rehabilitation of water supply structures in villages	Number of water supply structures installed	Reinforced climate control	0,92	2021-2030	
	some from Stabilization of the river in risk areas	Promotion Technical from Stabilization of the river in risk areas	Number of Stabilized river risk areas	Innovation	0,46	2021-2030	
		Strengthening the resilience of vulnerable populations (women and children) through support for the Healthy School and Village programme	Number of Healthy School and Village programme implemented	Security Strengthened food and nutrition	0,35	2021-2030	
		Promotion of pro-poor approaches to the provision of infrastructure and sanitation services	Number of infrastructure and sanitation services	Ecosystem protection	0,22	2021-2030	

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
			Nt installed as part of the pro-poor				
		Production, management and dissemination of information on water resources and water/agro-water developments	Number of communication plans implemented	Reinforced climate control	0,06	2021-2030	
		Improving access to safe drinking water	Number of households with access to safe drinking water (rural, urban)	Improvement of the habitat	0,23	2021-2030	
		Improving access to sustainable waste management services and wastewater treatment	Number of households with access to sanitation services Nt	Habitat Improvement	0,20	2021-2030	
		Improvement of access to communication (roads and ICTs) and opening up of vulnerable rural areas	Number of households with access to information	Improved quality of life	0,32	2021-2030	
Health	Facilitate Access services from health	Construction/Rehabilitation and Equipment of health facilities	an Number health facilities built, rehabilitated or	Improvement Health	0,92	2021-2030	

	d improve	an the					
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Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
Health	Quality of life		Equipped with				  
		Human capacity building and facilitating access to basic health services for vulnerable populations	Number of people with access to basic health services	Improvement Health	0,88	2021-2030	 
		Promoting the integration of the gender/youth/vulnerable groups approach in the fight against climate change	Number of individuals and institutions trained	Strengthened human and institutional capacities	0,23	2021-2030	 
		Incorporating the potential impacts of climate change on public health in public health policies and plans. development	Number of Plans or programmes	Governance Strengthened climate	0,06	2021-2030	 
		Developing synergies with other public health initiatives	Types of synergy created Number and quality committed actors	Strengthened climate governance	0,06	2021-2030	 
Energy	Facilitate access to clean energy and at a low cost	Promotion of alternative energy production methods (installation of solar, wind, biomass systems),	Number of households with access to alternative energy	Ecosystem protection	0,40	2021-2030	   

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated Cost (Billions USD)	Implementation period	Alignment with the SDGs
	affordable	Improved climate modelling techniques at the local scale to better predict future impacts	Identified climate scenario	Ecosystem protection	0,23	2021-2030	
		Development of water retention basins, construction of dikes to protect production infrastructure	Number of watersheds developed	Ecosystem protection	0,35	2021-2030	
		Promotion of the rational use of electrical energy, improvement of the management of the energy distribution network system	Number of households with access to electricity	Ecosystem protection	0,17	2021-2030	
		TOTAL			23,08		

7. Measurement, Reporting and Verification (MRV) Framework

7.1 Transparency Framework

The new and improved transparency framework requires the NDC MRV system to transparently report on progress towards the targets set out in the DRC NDC and to monitor progress in the implementation of mitigation and adaptation actions – as well as the use and results of the means of implementation and support, including capacity building, technology transfer and finance. The MRV system also takes into account the non-GHG impacts on the environmental, social and economic impacts of NDC actions that would lead to a transformational shift towards achieving national sustainable development goals. In the case of the DRC, this must take into account the integration of the gender and youth dimension which are at the heart of the country's National Strategic Development Plan (PNSD).

These national and international requirements for the three dimensions of MRV overlap and it is useful to demonstrate their linkages within the national MRV system. For example, finance, capacity building and technical support have a direct impact on the implementation of mitigation and adaptation actions. Therefore, the DRC NDC National MRV System will be useful in monitoring and reporting on progress and use of support, as well as facilitating the identification of challenges to inform policy changes critical to improve implementation.

In the DRC, the mandate to coordinate and monitor the harmonious implementation of environmental action in general, and climate action in particular, is entrusted to the Ministry of Environment and Sustainable Development (MEDD). The MEDD, through the Sustainable Development Department (DDD), ensures the coordination of the entire implementation and monitoring of all issues related to climate change. He is the focal point of the United Nations Framework Convention on Climate Change (UNFCCC). As such, the DDD ensures the preparation and production of national greenhouse gas (GHG) inventory reports in collaboration with the various national institutions (the Ministry of Finance, the Interior, Agriculture, Transport, Public Works and Infrastructure, Industry, Trade, Rural Development, Spatial Planning, Scientific Research, etc.). Planning, Budget, Public Health, Livestock, Hydrocarbons, Economy, Mines; Hydraulics and Electricity, Gender, Universities) and other organizations, both nationally and internationally. The Ministry of Environment and Sustainable Development also promotes the integration of environmental policies and strategies and climate change issues into national development plans.

Under the leadership of the Ministry of Environment and Sustainable Development, a National Committee on Climate Change was established. It brings together the delegates of the

Universities and research centres, national organisations and civil society in order to share a common vision and understanding in the implementation of projects likely to ensure the advancement of interventions, initiatives and activities in the field of climate change in a harmonious and collaborative atmosphere.

A Technical Coordination Committee and Thematic Working Groups are set up to carry out the various activities, studies and reports. The Technical Coordination Committee is intended to be a consultation body and a space for dialogue, exchange and guidance between stakeholders for the implementation of the NDC. It brings together delegates from different public administrations, institutions and organizations to share a common vision and understanding in the implementation of projects likely to ensure the advancement of interventions, initiatives and activities in the field of climate change in a harmonious and collaborative atmosphere.

The functions of the Technical Coordination Committee are determined as follows: (i) To ensure the development of the NDC into a single streamlined national process under the technical responsibility of the MEDD; (ii) Facilitate coordination with relevant authorities at national, provincial and local levels; (iii) Define the directions and guidelines of the NDC process and decide on the actions to be taken (iv) Decide on the overall status of the activities of the various projects and initiatives related to the NDC; (v) Review and exchange views on major issues relating to the implementation of the above-mentioned projects, as well as propose corrective measures; and (vi) Monitor and evaluate the implementation of the NDC process.

The DDD ensures all notification and communication to the Technical Coordination Committee and the Government, through the MEDD, in order to inform the policies and strategic decisions that ensure that the NDC MRV effectively supports the sustainable development of the country in accordance with its National Strategic Development Plan (NSDP).

The following are key areas that are part of the Committee's mandate:

- Review and establish the objectives of the committee, the mandate, the composition and the general working modalities of the committee, the main one being the approval and subsequent report of NDC MRVs at the national and global levels;
- Provide advice and feedback on scope, schedule, costs and quality concerns, or guidance on programme priorities, that arise during the planning, design and implementation of NDC-related projects;
- Facilitate access to resources needed to review and report on MRVs of the NDC and approve projects at key milestones;
- Review and review studies, research activities in line with the NDC to facilitate quality assurance and alignment with strategic priorities;

- Develop and operationalize an effective communication plan on the NDC MRV.

Figure 8 below summarizes the institutional arrangements for monitoring NDC implementation, including the national NDC MRV process.

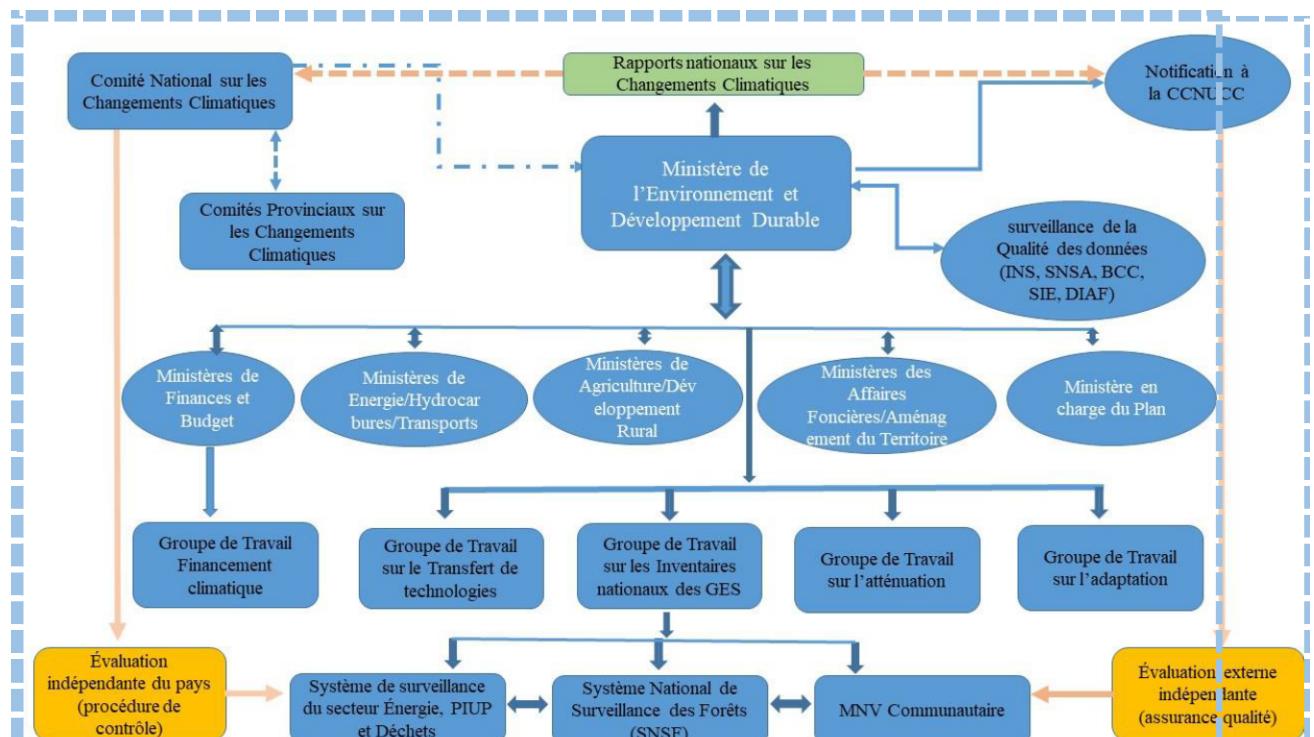


Figure 17: Institutional arrangements for monitoring NDC implementation

The following Table 12 presents a list of relevant actors who will be involved in the preparation and subsequent implementation of the NDC, in accordance with their national role or responsibility and their role in the process of implementing the NDC.

In addition, during the preparation phase of the implementation of the NDC, it will be possible to consider the participation of other specialized institutions such as the National Institute of Agronomic Studies and Research (INERA), the National Agency for Meteorology and Remote Sensing by Satellite (METTELSAT), the National Agricultural Statistics Service (SNSA), the National Observatory of Spatial Planning (ONAT), etc.

7.2 NDC MRV Data and Information Management

The results-based monitoring and evaluation system will be the main reference and therefore the appropriate platform for monitoring and managing information and data for the environment and natural resources sector, chaired by the MEDD. Thus, all data related to climate change, including the NDC MRV managed and reported by the NDC MRV Technical Working Committee, will be processed and accessible by the results-based monitoring and evaluation system. Evaluation and

Defining the most suitable data sources will be important for any MRV system to be effective.

The NDC MRV Technical Working Committee that will be established will play a critical role in the production and reporting of data and information at the national level and reporting and will be meaningfully involved in data collection, transparency and verification. The committee will ensure that DRC's MRV system links mitigation, adaptation and finance, as well as capacity building support and technology transfer as critical aspects of NDC implementation.

Primary data will typically be collected at the provincial level and sectors/institutions will have direct links with provincial levels to obtain sector/action-specific data and information, including the NDC MRV.

This will be done with the support of stakeholders at the provincial level, an opportunity for the engagement of NGOs, the private sector and development partners to provide inputs to the NDC MRV process. The Ministry of Environment and Sustainable Development (MEDD) will provide oversight and coordination by facilitating data management flows from provincial governments to central-level institutions. The Climate Change Division within the Sustainable Development Directorate of the MEDD is the technical focal point for the collection, processing, capture and analysis of data related to the NDC's MRV.

The National Institute of Statistics (INS) of the DRC will be at the heart of the national data production processes and will have the ultimate role of validating national statistics through the authentication of data and information, and thus the approval of national statistics shared with different users. The National Institute of Statistics (NSI) will facilitate the development and implementation of data collection protocols and annually review national standards and guidelines for data entry and aggregation to guide mitigation and adaptation data and information produced by sectors.

Table 9: List of actors relevant to the implementation of the NDC

Stakeholders	Responsibility/Role	Role in the implementation of the NDC
Ministry of Environment and Sustainable Development (MEDD)	<p>MEDD leads and is the main national coordinator of environment and climate change activities in the DRC on behalf of the government.</p> <p>It is responsible for the preparation of national and international reports (national GHG inventories, national climate change communications, biennial update reports (BUR), NDCs, national climate change plans, etc.), as well as for the management of data related to the forest sector. It acts as the Focal Point of the UNFCCC, GEF and GCF.</p> <p>Responsible for the National Forest Monitoring System, national forest inventories. It is an important source of information on forest dynamics in the DRC. It will be one of the stakeholders consulted for knowledge exchange, data collection and dissemination on the forests in the DRC.</p>	<p>It will coordinate all activities for the preparation and implementation of the project's interventions, as well as those related to monitoring, reporting and improving transparency.</p>
Ministry of Agriculture (MINAGRI)	<p>Responsible for the design, formulation, coordination, promotion, monitoring and evaluation of agricultural development policies. It is in charge of managing all data relating to agriculture published in the SNSA directories (animal production and plant).</p>	<p>He will be responsible for coordinating tasks related to the collection and improvement of data for the monitoring and reporting of agricultural activities.</p>

Stakeholders	Responsibility/Role	Role in the implementation of the NDC
Ministry of Rural Development (MINDER)	Responsible for achieving food security and for the sustainable and effective improvement of the living conditions of rural populations.	It will coordinate activities and data management related to rural activities and due to its representation across the country, it will provide operational and technical information for all aspects of the AFOLU sector at different levels.
Ministry of Fisheries and Livestock	Responsible for the sustainable management of fisheries and animal resources and their contribution to the food and nutrition security of the population. He is in charge of managing all the data relating to livestock and fishing.	It will be responsible for coordinating tasks related to the collection and improvement of data for the monitoring and reporting of fishing and farming activities.
Ministry of Spatial Planning	Responsible for planning (zoning) rational land use	<ul style="list-style-type: none"> - To assess the potential of the territory with regard to renewable and non-renewable natural resources of the national soil and subsoil - Permanently control and monitor the use of the country's physical space - Share the data from the National Monitoring of the TA with the INS for their capitalization in the monitoring-Evaluation of the implementation of the NDC
Ministry of Land Affairs	Responsible for the management of the general property regime, land and real estate	<ul style="list-style-type: none"> - Facilitate Access and Secure the earths Local Communities and Indigenous Peoples - Securing land tenure in order to promote sustainable management rational and sustainable natural resources
Ministry in charge of Planning (Ministry of Planning)	Responsible for the production of national statistics and the management of all data related to the national and regional planning.	It will ensure compliance with national statistical standards.

Stakeholders	Responsibility/Role	Role in the implementation of the NDC
Ministry of Health	Implementing the Government's policy in the field of health	<ul style="list-style-type: none"> - Contribute to reducing environmental pressures that could lead to migration and its effects on health and well-being. - Mobilizing the health sectors in the face of major environmental risks, including climate change, air pollution, water and sanitation, food safety, waste, and exposure to hazardous and toxic chemicals - Stimulate and increase the exchange of good practices, experiences and technical expertise with a view to strengthening health, improving the monitoring of health and social security. <p>health and environmental protection</p>
Ministries in charge of Foreign Affairs and International Cooperation	Research negotiate and mobilize some external resources for national development.	Organize meetings of bilateral and multilateral partners and set up a permanent framework for consultation at the national level.
Ministries in charge of the interior and of Social Affairs	Managing natural disasters and calamities	Coordinate the inter-ministerial commission on natural disasters and calamities.
Ministry of Scientific Research	Promoting scientific research and technology transfer in the field of climate change	<ul style="list-style-type: none"> - Directing scientific research and technology to support efforts to combat climate change - Publish and disseminate research results <p>Science and technology in the fight against climate change</p>

Stakeholders	Responsibility/Role	Role in the implementation of the NDC
INS	The National Institute of Statistics (INS) of the DRC is at the heart of the national data processes and has the ultimate role of validating national statistics through the authentication of data and information, and thus the approval of national statistics shared with the exterior.	The National Institute of Statistics (NSI) will facilitate the development and application of data protocols and annually review national standards and guidelines for data entry and aggregation to guide data and information on mitigation, and adaptation produced by the sectors.
Department of Finance (Department of Finance)	Responsible for national budget planning; he Actively participates in various activities related to the review of public expenditures and financial management.	It will guarantee the effectiveness of the DRC's financial contribution to this project.
Ministry of Gender, Family and Children	It was established to develop and coordinate the implementation of government measures related to the promotion and respect of women's rights and the protection of the family, to manage and coordinate social aspects. It is responsible for improving the legal and institutional framework to ensure women's participation in development, women's representation at all levels, and gender mainstreaming in policies and policies. programs.	It will support the integration of elements that contribute to closing the gender gap in climate change adaptation and mitigation activities, as well as more gender-balanced access to domestic resources. It will also support the development of strategies to reduce the gender gap in project activities, particularly those related to capacity building.
Ministry of Energy (Water Resources and Electricity)	Responsible for the management of statistics on the supply, production and consumption of energy resources at the national level.	It will be responsible for coordinating tasks related to the collection and improvement of data for the monitoring and reporting of fuel procurement, production and consumption activities.
Ministry in load Hydrocarbons	Responsible for the management of statistics on the supply, production and consumption of hydrocarbons at the national level	It will be responsible for coordinating tasks related to the collection and improvement of data for the monitoring and reporting of liquid fuel procurement, production and consumption activities.

Stakeholders	Responsibility/Role	Role in the implementation of the NDC
Ministry of Transport	He is in charge of managing all data relating to the fleet of vehicles (rolling vehicles, aviation, river and lake navigation)	It will be responsible for coordinating all tasks related to the collection and improvement of data for the monitoring and reporting of transport sector activities
National Committee on Climate Change	At present, the guidelines for the implementation of projects and programmes are monitored within the framework of separate steering committees	To share a common vision and understanding in the implementation of projects likely to ensure the advancement of interventions, initiatives and activities in the field of climate change in a harmonious and collaborative atmosphere.
Technical Committee for the Coordination and Monitoring of the Implementation of the NDC	<p>It has an operational and consultation role between the key entities of the sectoral ministries and the technical partners involved in the various components of the NDC. Its role is to contribute to the analysis and technical validation of all the technical data and information produced within the framework of the NDC.</p>	<p>The Technical Coordination Committee is intended to be a consultation and guidance body between stakeholders for the implementation of the NDC. It brings together delegates from different public administrations, institutions and organizations to share a common vision and understanding in the implementation of projects that can ensure the advancement of interventions, initiatives and activities in the field of climate change in a harmonious and collaborative atmosphere</p> <p>It will support the information aspects associated with the NDC for the Energy, AFOLU and Waste sectors and the implementation of the plan.</p>

Stakeholders	Responsibility/Role	Role in the implementation of the NDC
Provincial (Technical) Committee on Climate Change	Its role is to contribute to the analysis and technical validation of all the technical data and information produced at the provincial level within the framework of the NDC.	The Technical Coordination Committee is intended to be a consultation and guidance body between stakeholders at the provincial level. It brings together delegates from different public administrations, institutions and organizations to share a common vision and understanding in the implementation of projects that can ensure the advancement of interventions, initiatives and activities in the field of climate change in a harmonious and collaborative atmosphere
Universities and research centres	They are responsible for research, innovation and formal training in all areas, including those related to climate change, as well as adaptation and mitigation measures.	They will provide information on climate change, methodologies and approaches for monitoring, estimating GHGs, and tracking progress in NDC implementation. They will be invited to participate in trainings, workshops and meetings in order to have an effective exchange of knowledge and good practices. In addition, universities could support training processes and the inclusion of these topics in university degree programmes. That partnership with some Institutions will provide the dissemination of the scientific basis on the need for natural capital accounting and legislation for various initiatives under this process.

Stakeholders	Responsibility/Role	Role in the implementation of the NDC
Civil society organizations	<p>They play an important role at the local level in organizing, raising awareness, building capacity and implementing specific actions to adapt and mitigate climate change. Some of the organizations that will be involved in the project will be: CEDEN, CODELT, GTCRR, LINAPYCO, Logos Premier, OCEAN, REBAC, REFADD, REPALEF-DRC, NRN, among others.</p>	<p>They will be invited to participate in activities related to the implementation of climate change policy and law, capacity building, and the production/collection of data and information relevant to the operation of the MRV system and GHG inventories.</p>
Private sector organizations	<p>They are a key actor in the achievement of NDCs and the implementation of climate change adaptation and mitigation activities, as they are also affected by them. Some examples of private sector organizations are COPEMECO (Confederation of Small and Medium-Sized Enterprises), FIB (Federation of Wood Industrialists), FEC (Federation of Congolese Enterprises), SAFBOIS and SIFORCO, and agro-industries.</p>	<p>Its participation is required to make possible the implementation of climate change policy and law, both for the application of mitigation and/or adaptation measures and the achievement of NDCs and for the provision of data and information for the operation of MRV and GHG inventories.</p>

Stakeholders	Responsibility/Role	Role in the implementation of the NDC
The Central Bank of DR Congo (BCC)	Define and implement the country's monetary policy, the main objective of which is to ensure the stability of the general price level.	<ul style="list-style-type: none"> - Ensure that climate change is taken into account in macroeconomic projection models and methodologies and risk assessments; - raise awareness of climate-related risks among commercial banks, thereby ensuring that they are able to manage these risks appropriately; - Invest in green bonds as part of asset purchases to avoid market distortions; - Measure and estimate the risks that changes in weigh on the national financial system and communicate the findings.
Specialised services (INERA, METELSAT, SNSA, ONAT)		

8. Means of implementation

Characterized by a very low contribution to global GHG emissions, a very low GHG intensity in relation to Gross Domestic Product (GDP), and the lowest human development index according to the 2020 Human Development Report (UNDP, 2020), the DRC must therefore face many challenges in terms of socio-economic development. In addition, the country must prioritize minimizing the risks of climate change impacts, due to the high vulnerability of certain economic activities, such as agriculture and forestry.

This section provides an overview of means of implementation in terms of (i) institutional arrangements; (ii) capacity building, (iii) technology transfer, and (iv) the need for relevant financing to facilitate and accelerate the implementation of mitigation and adaptation actions.

8.4. Political mechanisms and institutional arrangements

The implementation of the NDC will be carried out, under the leadership of the Ministry of Environment and Sustainable Development (MEDD), in collaboration with various relevant sectoral ministries at the local, provincial, national and other stakeholders, including youth, women and indigenous peoples.

8.5. Governance

The results of the specific studies will feed regularly into national climate change policy, and key laws and regulations will be enacted, including the Climate Change Act and the Spatial Planning Act. A legal text will be adopted establishing the appropriate institutional arrangements to ensure the coordination of intersectoral actions in the fight against climate change.

8.6. Gender equality, youth and Indigenous Peoples' participation

The operationalization of the NDC will only be possible in an inclusive approach, guaranteeing gender equity, equal rights between women and men, boys and girls, integrating children, youth, Indigenous Peoples and other vulnerable groups.

Since 2009, in order to comply with its commitments to promote women's rights and gender equality, the Government has adopted a National Gender Policy and an action plan. In 2020, a report on the analysis of gender in climate change adaptation planning, as well as a plan to strengthen the resilience of Indigenous women to the effects of climate change.

The DRC also has a Youth Policy and its Strategic Implementation Plan.

Recently, a draft law on fundamental principles relating to the rights of Pygmy Indigenous Peoples was adopted by the National Assembly.

8.7. Communication

Clear lines of communication will be developed at different levels (local, provincial, national and international) and between different sectors and stakeholders, ensuring gender equality, the participation of young people and Indigenous Peoples.

8.8. Capacity building and technology transfer

Under the Paris Agreement, developed countries have committed to facilitating technology transfer and capacity building to developing countries. Many developing countries have expressed their capacity needs to support and identify gaps in both technology and expertise to ensure that bilateral and multilateral resources are tracked.

It is essential that the provisions of the Paris Agreement on capacity building are successfully implemented. Technology transfer and capacity building will be needed to fully implement DRC's contributions to mitigation and adaptation. Specific needs identified in this framework include, but are not limited to:

- Access to and removal of barriers to the diffusion of appropriate clean technologies;
- Building climate information systems;
- Promotion of renewable energy and energy efficiency, including the involvement of the private sector;
- Establishment of public-private partnerships.

8.9. Private sector engagement.

Private sector organizations are key actors in the delivery of NDC interventions and in the transparent implementation of climate change adaptation and mitigation activities, without neglecting social and environmental aspects. Their participation is necessary to make possible the implementation of climate change policy and law, both for the implementation of mitigation actions and the implementation of NDC interventions and for the provision of data and information for the operation of the MRV system and the realization of national GHG inventories.

During the preparation phase of the roadmap for the implementation of the NDC, the participation of private sector organizations will be defined, as well as the activities of the NDC

in which these organizations will be involved, although it is foreseeable that they will be related to the implementation of the climate change policy and law and inputs on the processes of production/collection of data and information relevant to the MRV system and national GHG inventories.

The involvement of private actors will be particularly relevant in carrying out projects that will achieve the objectives of the energy and agriculture sectors.

In addition, the participation of representatives of the private sector in the DRC is currently ensured by two entities: the Federation of Commercial Enterprises (FEC) and the Federation of the Wood Industry (FIB). However, the government is implementing the identification and mapping of additional representatives of key stakeholders, their main areas of focus and interests, in order to define the decisive incentives that could enable them to better and more participate in the implementation of the NDC.

8.10. Financial requirements

As part of the NDC revision process, in-depth analysis and consultations with different stakeholders and sectoral experts were undertaken to produce conditional and unconditional cost estimates for mitigation and adaptation actions up to 2021 and 2030. The total estimated cost is approximately twenty-five decimal six (US\$25.6) billion for the 30 identified mitigation actions of the NDC, and more than twenty-three decimal zero eight (US\$23.08) billion for the 52 adaptation priorities, representing a funding requirement of approximately forty-eight decimal sixty-eight (US\$48.68) billion.

Given the many budgetary constraints to which the DRC is subject, only a minimum part of its contribution, unconditional measures for combined mitigation and adaptation, representing about two percent (2%) of the total estimated funding, can be financed from own resources. Indeed, the countless development priorities at the social, economic, educational, health, infrastructure, etc. levels, will receive a priority allocation of resources mobilized at the national level and must not be subject to competition from the financing of the NDC.

There may, however, be situations where the DRC's priority development objectives will be aligned with those of the NDC. Only such a situation would justify the financing of the NDC's activities from its own funds.

In line with the Paris Declaration on the Effectiveness of Official Development Assistance, the DRC encourages donors who wish to support the implementation of its NDC to align with the Government's objectives. These objectives integrate, in addition to those presented in the NDC, in particular those of the National REDD+ Strategy and its Investment Plan, as well as the sectoral policies developed within the framework of the REDD+ interventions financed

under the said Investment Plan, in particular the National Spatial Planning Policy.

6.3. Financing the NDC through carbon markets

Taking into account that the DRC has the second largest area of tropical forests in the world, accounting for more than 60% of the Congo Basin rainforest, the largest basin with a net absorption of greenhouse gases, the country plays a crucial role in mitigating climate change at the global level. The loss of this forest would represent a considerable release of greenhouse gases.

Thus, given its carbon potential and the gradual emergence of the carbon market, the DRC government has validated in the Council of Ministers ten urgent measures relating to the sustainable management of natural forest resources.

Among these measures, the institutionalization of the carbon tax and the creation of the Carbon Market Regulatory Authority come as a priority. These aim to provide the national economy with international capital resulting from carbon finance.

Indeed, the capture of revenues from the sale of carbon credits will contribute in particular: (i) to the increase in the national budget; (ii) the offsetting of ecosystem services of atmospheric carbon sequestration and storage by the forests of the DRC and; (iii) the financing of the measures provided for in the Nationally Determined Contribution (NDC) under the Paris Agreement.

The DRC reiterates the importance of finalizing the negotiations on Article 6 of the Paris Agreement so that the country can sell carbon credits through the international carbon market and thus finance the measures of its NDC. Also, in order to allow the country to benefit from adequate compensation for its efforts to reduce and avoid carbon emissions from deforestation and forest degradation, which will serve the whole world, it is essential that a fair and robust carbon price be established at the global level. With this in mind, in its contracts for the sale of emission reductions on carbon markets, the DRC reserves the right to negotiate an adequate price.

In the DRC, the regulation and the right of ownership and transfer of ownership applicable to Carbon Emission Reduction Units (CERUs) is established by the 2018 Approval Order. As a result, these carbon rights, the legal status of which is defined in Article 3 of the said Approval Order, must be materialized exclusively in the National REDD+ Register provided for this purpose. The DRC has decided to develop its own Emission Reduction Transaction Register in order to avoid multiple declarations of forest emission reductions, i.e. double counting, aimed at integrating the set of REDD+ programmes/projects developed in the country. This Register will track and monitor all emission reductions generated by each programme/project and will provide

regularly information on the issuance, transfer and sale of emission reductions.

Starting from a very low level of emissions per capita and per GDP, it will be difficult for the DRC to materialize its commitments to reduce emissions and contribute to the global effort while transferring ownership of these emission reductions. Therefore, the DRC wants to be able to account for the emission reductions generated under its NDC.

Second, the DRC hopes to sell the emission reductions generated under its NDC to buyers – both public and private – who have ambitious science-based mitigation targets for their own emissions that are publicly available in an updated NDC or climate action plan.

6.4. Payments for ecosystem services

One of the mechanisms that can be used in the financing of the DRC's NDC measures is payments for ecosystem services (PES). PES is a potentially important source of financing for the DRC, which provides ecosystem services of global value. As the DRC is home to the second largest rainforest in the world in terms of area, and a biodiversity that qualifies it as one of the 17 mega-diverse countries in the world, it provides ecosystem services that benefit the entire world, including developed countries, among others:

- The provision of a geographically defined ecosystem service, i.e. the conservation of a rich and unique biodiversity, which does not exist elsewhere than in the DRC; and
- The provision of an ecosystem service with multiple benefits, namely carbon sequestration, water regulation and soil retention, and consequently the regulation of the regional and global climate.

The DRC plans to set up a national PES programme, to ensure that these ecosystem services, provided by the DRC, can be offset through PES mechanisms that reduce incentives for deforestation, with a view to conserving biodiversity and habitats as well as carbon sinks within forest ecosystems. For example, this program may pay forest resource owners, such as forest communities, local or national governments, forestry companies or farmers, to preserve forest resources, establish wildlife corridors and/or maintain crop varieties that are most favourable to natural ecosystems. With a view to regeneration, such a mechanism could encourage agricultural installations in savannahs, shaded cultivation methods, or alternative energies that could reduce the consumption of firewood.

By setting up PES mechanisms in the DRC to finance the measures proposed in the NDC, it will be crucial to ensure that they are anchored in land use planning tools, that there is a link with land tenure security and that there are synergies between the fight against deforestation and poverty reduction, with a view to avoiding harmful effects.

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