

DEMOCRATIC REPUBLIC OF THE CONGO  
Vice-Primacy



Ministry of the Environment and  
Sustainable Development

## Revised Nationally Determined Contribution

Kinshasa, October 2021

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## Acronyms

<b>Acronyms</b>	<b>Meanings</b>
%	Percentage
°C	Degrees Celsius
AFAT	Agriculture, Forestry and Other Land Use
AFAT	Agriculture, Forestry and Other Land Use
AGR	Income-generating activities
AGR	Income-generating activities
ANATAC	National Alliance of Traditional Authorities of Congo
BAU	Business as Usual
BCC	Central Bank of Congo
UNFCCC	United Nations Framework Convention on Climate Change
CDN	Nationally Determined Contribution
CEDEN	Circle for the Defence of the Environment
CN	National Communications
CN	National Communications
CODELT	Council for Environmental Defence through Legality and Traceability
COMIFAC	Central African Forests Commission
COPEMECO	Confederation of Small and Medium-sized Enterprises
COVID-19	Coronavirus pandemic, appearing in 2019
CPDN	Expected Contribution Determined at National Level
DAS	Sanitation Department
DDD	Sustainable Development Department
DGPA	Dynamics of the Indigenous Peoples Group
DIAF	Forest Inventory and Planning Department
EDC	Electricité du Congo
EFIR	Reduced Impact Logging
ENERKA	Energy from Kasaï
ENK	Electricity of North Kivu
ERAIFT	Regional Post-Graduate School for Integrated Planning and Management of Tropical Forests
EVA	Sanitised School and Village
FAO	Food and Agriculture Organization of the United Nations
FAT	Forestry and other Land use
FEC	Congo Business Federation
FEC	Federation of Congo Companies
FIB	Fédération des Industriels du Bois
FONAREDD	REDD+ National Fund
GDT	Sustainable Land Management
GHG	Greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
LPG	Liquefied Petroleum Gas
GTCRR	Renewed REDD+ Climate Task Force
GW	Gigawatt
Ha	Hectare
HPS	High-pressure sodium vapour lamps (HPS)

<b>Acronyms</b>	<b>Meanings</b>
IDE	Foreign direct investment
IDH	Human Development Index
INERA	National Institute for Agronomic Studies and Research
INS	Institut national de la statistique
FSI	Total fertility rate
Kg	Kilogram
Km	Kilometre
Km <sup>2</sup>	Square Kilometre
LED	Light-Emitting Diode (LED)
LEDS	Strategy of Development Sober in Carbon/Low Emissions Development Strategy
LINAPYCO	National League of Indigenous Pygmy Associations of Congo
LPS	Low-pressure sodium vapour lamps
m <sup>3</sup>	Cubic metre
MAAN (NAMAS)	Appropriate mitigation measures at national level
MAED	Model for Energy Demand Analysis
MAGICC-ScenGen	Model for the Assessment of Greenhouse-gas Induced Climate Change
M <sup>d</sup> USD/US\$	Billion US Dollars
MDP	Clean Development Mechanism
MECNT-DD	Ministry of the Environment, Nature Conservation and Development Durable
MEDD	Ministry of the Environment and Sustainable Development
MIBA	Société Minière de Bakwanga
MINAGRI	Ministry of Agriculture
MINAT	Ministry in charge of Town and Country Planning
MITPR	Ministry of Infrastructure, Public Works and Reconstruction
MNV	Measurement, Notification and Verification
Mt	Megatons
Mt CO <sub>2</sub> eq	Megatonne Carbon Equivalent
MW	Megawatt
ND-GAIN	Notre Dame Global Adaptation Index Notre-Dame
Nm <sup>3</sup>	Standard cubic metres
OCEAN	Congolese Organisation of Ecologists and Friends of Nature/Asbl
ODD	Sustainable Development Objectives
OVD	Roads and Drainage Office
PANA	National Adaptation Programme of Action
CEO	Energy IT Management Development Programme
CEO	Energy Information Development and Management Programme
PDP	Provincial Development Plan
PDP	Provincial Development Plan
PEA	Agricultural clusters
PERENCO	Independent Franco-British oil company
NTFPS	Non-timber forest products
PGE	Environmental Management Plan
GDP	Gross Domestic Product
PIUP	Industrial Processes and Product Use

<b>Acronyms</b>	<b>Meanings</b>
NAP	National Climate Change Adaptation Plan
PNEFEB	National Environment, Forestry, Water and Biodiversity Programme
PNG	National Gender Policy
NIPA	National Agricultural Investment Plan
PNSAR	National programme to revive the agricultural and rural sector
PNSD	National Strategic Development Plan
PONA	National Sanitation Policy
PSPA-CC	Policy, Strategy and Action Plan for combating Climate Change
RBA	Biennial Update Report
RDC	Democratic Republic of Congo
REBAC	Congo Basin Forest Ecclesial Network
REDD+	Reducing Emissions from Deforestation and forest Degradation (REDD) forests, including conservation, sustainable forest management and the enhancement of carbon sinks
REDD+	Reducing Emissions from Deforestation and Forest Degradation
REFADD	African Women's Network for Sustainable Development
REPALEF-RDC	Network of Indigenous and Local Peoples for Sustainable Forest Management Forest Ecosystems of the DRC
RRN	Natural Resources Network
SAFBOIS	Société Africaine du Bois
Sarl	Société par Action à Responsabilité Limitée
SCTP	Société Congolaise des Transports et Ports
SE4ALL-RDC	Sustainable Energy for All Initiative (SE4ALL)
SENOKI	North Kivu Electricity Company
SIFORCO	Société Industrielle et Forestière du Congo
SNCC	Société nationale des chemins de fer du Congo
SNEL	Société Nationale d'Electricité
SNSF	National Forest Monitoring System
SOKIMO	Société Minière de Kilo Moto
TCN	Third National Communication
ICT	Information and Communication Technology
UNIKIN	University of Kinshasa
US	United State
USD/US\$	US Dollar
ZCIT	Intertropical Convergence Zone
SEZ	Special Economic Zones

## **PREFACE**

The Democratic Republic of Congo (DRC) has been a party to the United Nations Framework Convention on Climate Change (UNFCCC) since 1997. One of its aims is to stabilise 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 rise in global temperature "well below" 2°C, while 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 modernisation and sustainable development, including efforts to adopt a low-carbon development path 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 Programme of Action; the National Framework Strategy for Reducing Emissions from Deforestation and Forest Degradation; the Reference Emission Level for Forests; and the National Adaptation Plan.

In 2015, ahead of the adoption of the Paris Agreement, the DRC submitted its Nationally Determined Contribution (NDC) to the UNFCCC, with an emissions reduction target of 17%, focusing on three main gases: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) from the Energy, Agriculture and Forestry and Other Land Use sectors.

In response to the call for greater ambition, the DRC has undertaken to raise its mitigation and adaptation targets, and to accelerate forestry, land tenure and land-use planning reforms in order to make an effective contribution to the fight against poverty. Its current target is to reduce its emissions by 21%, taking into account the waste sector not covered in the first submission, at an estimated overall cost of forty-eight point sixty-eight (48.68) billion US dollars.

In my capacity as Deputy Prime Minister, Minister for the Environment and Sustainable Development, I will ensure that the Congolese government's efforts to preserve the environment lead to a reduction in the harmful impacts of climate change on the national economy and an improvement in people's living conditions. For this reason, I am proud to present the revised Nationally Determined Contribution (NDC) for the period 2021-2030, in which the country reaffirms its character as a Country-Solution through its immense forest mass, its dense hydrographic network, its energy potential and its strategic minerals.

**Maître Ève BAZAIBA MASUDI**  
Deputy Prime Minister, Minister for the  
Environment and Sustainable Development

### Introduction

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

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

### The DRC's vision for climate change

The DRC's vision in the fight against climate change is to promote a green, resilient and low-carbon economy by rationally and sustainably managing its important natural resources in order to guarantee 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 firmly committed to taking urgent measures to mitigate its greenhouse gas (GHG) emissions and adapt to the effects of climate change, in accordance with Article 4<sup>1</sup> 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 currently preparing its fourth National Communication and finalising its first Biennial Update Report (BUR).

Although its emissions mainly from forestry and land use, followed by waste management, agriculture and energy consumption make up a significant proportion 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. Consequently, adaptation to climate change is a major concern and priority for the country.

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



## **NDC review process**

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

The conditional reduction target under the 2015 bid was 17% by 2030, taking into account three main sectors, including Energy, Agriculture and Forestry, associated with emissions of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).

The present NDC, whose reduction target is set at 21% with conditional interventions at 19%, and unconditional interventions at 2%, updates and strengthens 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. In addition to the three sectors mentioned above (Agriculture, Forestry and Energy), it also includes the Waste sector 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 measures.

## **Contribution to mitigation**

The mitigation measures implemented by the DRC mainly concern the forestry sector, in particular the implementation of its national strategy for reducing emissions from deforestation and forest degradation (REDD+). In addition to the REDD+ strategy, the DRC's nationally determined contribution presents certain mitigation measures and actions in the energy (including transport), agriculture and waste sectors. Unfortunately, to date, these few initiatives in less GHG-emitting sectors have been less well documented. However, the DRC is committed to improving its data collection and management system and formalising institutional arrangements that support the collection, analysis, processing and communication of information on a regular and long-term basis on mitigation actions and efforts to explore associated co-benefits.

The DRC aims to be an emerging country by 2030, with a vision of development towards an increasingly low-carbon economy.

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

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

This equates to an estimated mitigation level of up to 650 Mt CO<sub>2e</sub> by 2030.

The table below shows the main levers for action identified and the associated costs by sector, as well as the potential for reducing emissions by 2030. A total of 30 actions to reduce GHG emissions are proposed, classified according to priority sectors.

The table below summarises the main levers for action, the emissions avoided and the associated costs by sector in 2030, with a view to achieving the reduction target.

Sector	Nº	Actions	Reduction potential in 2030 (in Mt CO <sub>2e</sub> )	Estimated cost (Billions USD)
Energy	1	Electrify rural and peri-urban areas urban and urban by sources renewable energy	74,2 à 94,6	1,95
	2	Make use of fireplaces improve & enhance techniques carbonisation process to make it more effective		1,05
	3	Increase the share of energy renewables in the energy mix national		0,28
	4	Promoting the use of LPG and electric cookers		0,63
	5	Develop of Industrial plantations - Wood energy		0,18
	6	Developing the sector transport, with a focus on mass transport through the tram, bus, train...		1,1
Agriculture	7	Promote the practices agro-forestry and crop rotation and crops perennial crops particularly in forest areas, including wetlands	180 à 187	1,7
	8	Integrating agriculture into the national land use plan		0,2
	9	Promoting intensive agriculture in savannah areas with a view to limit pressure on forests natural		1,33
Sector	Nº	Actions 10	Reduction potential in 2030 (in Mt CO <sub>2e</sub> )	Estimated cost (Billions USD)

	10	Promoting rational and sustainable use of agricultural production areas to preserve agro-ecological conditions and ensure stability of forest cover		1,2
	11	Intensify food crop production (carbohydrates, oilseeds, legumes) in man-made savannah and degraded forest, including in forest areas (except in areas where land availability makes it difficult to avoid destroying at least partial forest)		1,3
	12	Popularise and disseminate resilient agricultural practices and other technological packages (use of climate-sensitive seeds, soil management, etc.). water management)		0,8
	13	Improving the management of intensive and extensive livestock farms		1,2
	14	Intensify agricultural cash production in secondary or primary forest and savannah, but with sustainable agroforestry systems (cocoa, coffee, banana, special crops) that make the most of farmers' comparative advantages to these crops		1,3
Forestry and other land use	15	Promote the traditional and modern afforestation and reforestation techniques with a view to preserving forests	182 à 192	1,45
	16	Supporting the development of community forestry as a tool for conserving biodiversity and combating biodiversity loss of forest cover in rural areas		1,5
	17	Restore wetlands, particularly peat bogs used for agriculture and livestock farming		1,3
	18	Making the most of the MEOR (Méthodologie pour l'Evaluation des Opportunités de Restauration - Methodology for Assessing Restoration Opportunities) tools at on a national scale, incorporating		0,85
<b>Sector</b>	<b>N°</b>	<b>Actions</b> 11	<b>Reduction potential in 2030 (in Mt CO2e)</b>	<b>Estimated cost (Billions USD)</b>

		harnessing traditional knowledge to conserve biodiversity around protected areas protected		
	19	Support initiatives to set up the platform for forest and landscape restoration		1,2
	20	Strengthen forest governance, in particular the fight against the illegal exploitation of timber and other forest resources, taking into account the studies, analyses and tools produced in the implementation of the various forestry processes. such as the FLEGT-VPAs		1,2
	21	Managesustainably timber harvesting		1,8
	22	Sustainable management and rehabilitation of mining and oil operations		0,09
	23	Combating bush fires		0,11
	24	Mapping and assessing peatlands		0,52
Waste	25	Strengthening the institutional and legal framework for waste management	37	0,14
	26	Set up a rational waste management programme		0,44
	27	Promoteuse oflandfill gas		0,07
	28	Promote the energy recovery from waste (reduction of CH <sub>4</sub> emissions from l a n d f i l l sites)		0,29
	29	Promoting aerobic composting		0,21
<b>Sector</b>	<b>Nº</b>	<b>Actions</b>	<b>Reduction potential in 2030 (in Mt CO<sub>2</sub>e)</b>	<b>Estimated cost (Billions USD)</b>

	30	Promoting the production of energy and organic fertilisers from solid waste, wastewater and sludge fecal		0,21
<b>Total</b>				<b>25,6</b>

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

An analysis of the historical trend in the DRC's GHG emissions shows that, during the period 2000-2018, national emissions were dominated by the "Forestry and other land use" (FAT) sector, with almost 86% of emissions, followed at a distance by the waste, energy and agriculture sectors, with 11%, 0.86% and 0.61% respectively. The AFAT and energy sectors are the two largest sources of carbon dioxide emissions. The AFAT 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 MtCO<sub>2e</sub> in 2018. The 2018 emissions are 36% lower than previously reported emissions levels for the period 2010-2014 due to investments supported by various REDD+ initiatives and programmes, including structural changes in forest management in the DRC. The AFAT sector is consistently identified as the largest source of greenhouse gas emissions in the DRC.

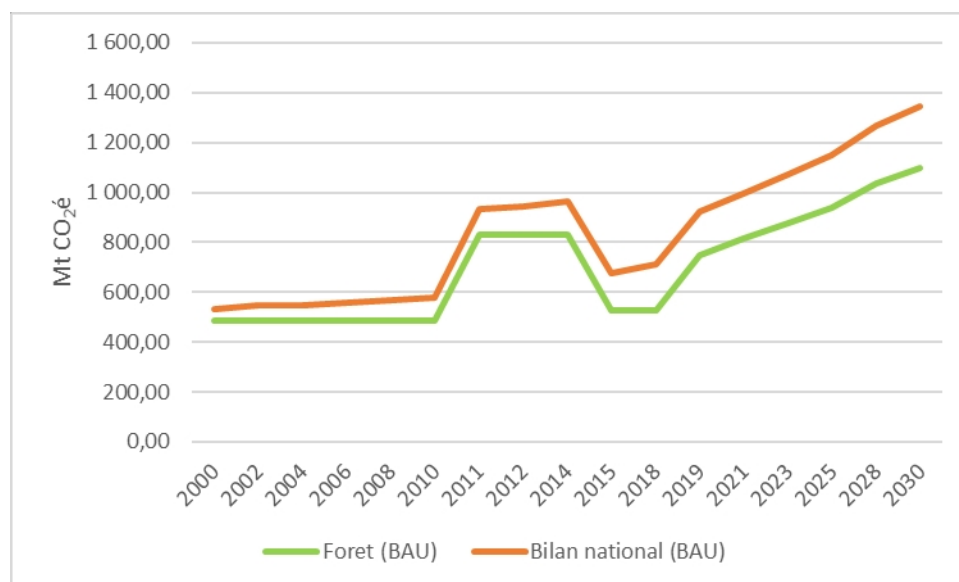


Figure 1: Historical and projected emissions at national level and from the forestry sector

Taking into account the various measures identified at national level, the reduction in GHG emissions should reach almost 21% by 2030 (Figure 2), with the reduction attributable to the AFAT sector reaching 28% (Figure 3).

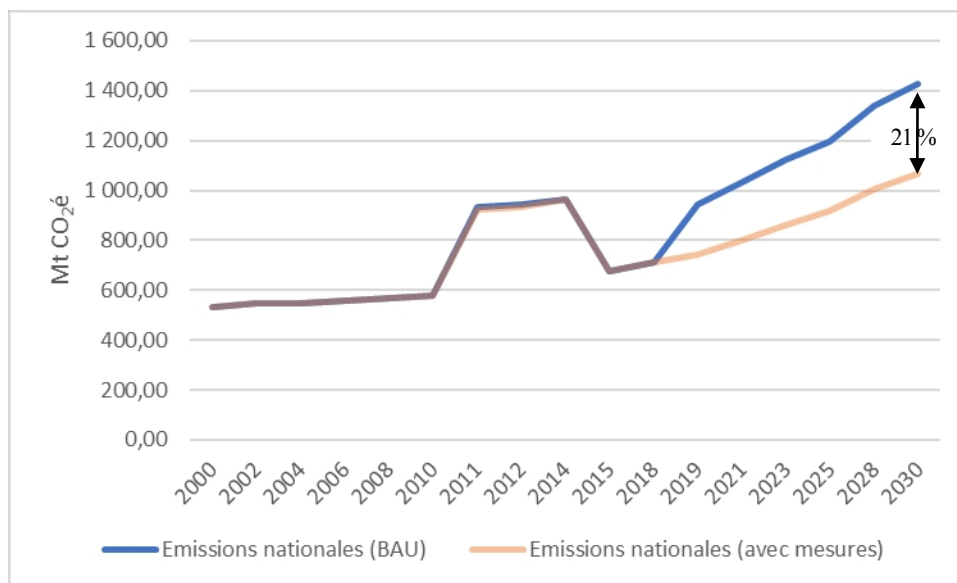


Figure 2: DRC GHG emissions, 2000-2018 and projected emissions (with measures)

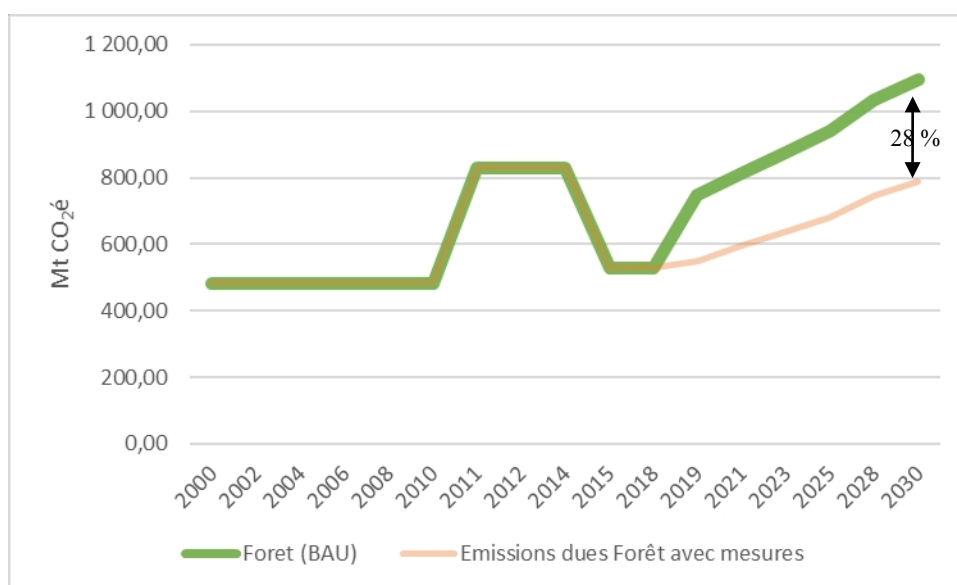


Figure 3: Emissions projections and reduction targets for 2030

The waste sector is characterised by an increase in emissions attributable to (i) the disposal of solid waste (90.4%) of all kinds generated by households, communities and businesses (shops, industries, construction, agricultural residues, etc.), (ii) the discharge of domestic wastewater (6.8%), and open-air combustion. These emissions account for an average of around 11% of total national emissions between 2000 and 2018.

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

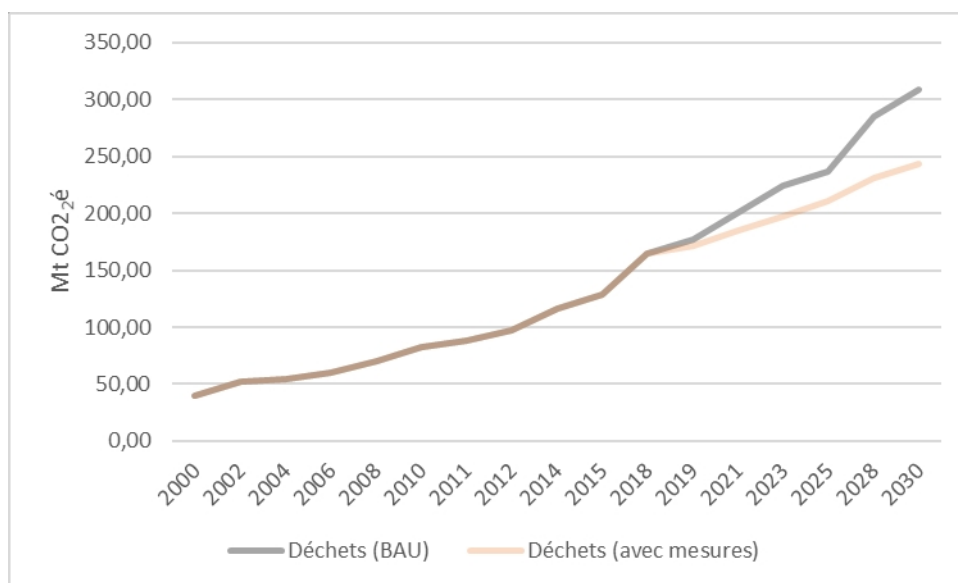


Figure 4: Projected emissions from the waste sector

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

Although waste management is on a small scale, the DRC's waste management policy encourages landfill disposal, which is helping to advance this waste management policy. It is expected to continue with small improvements in landfill efficiency and then extend to the recovery of landfilled waste deposits around major cities. It is expected that the proportion of waste going to landfill will continue to increase, although emissions reductions are likely to continue for some time, as emissions lag behind waste disposal.

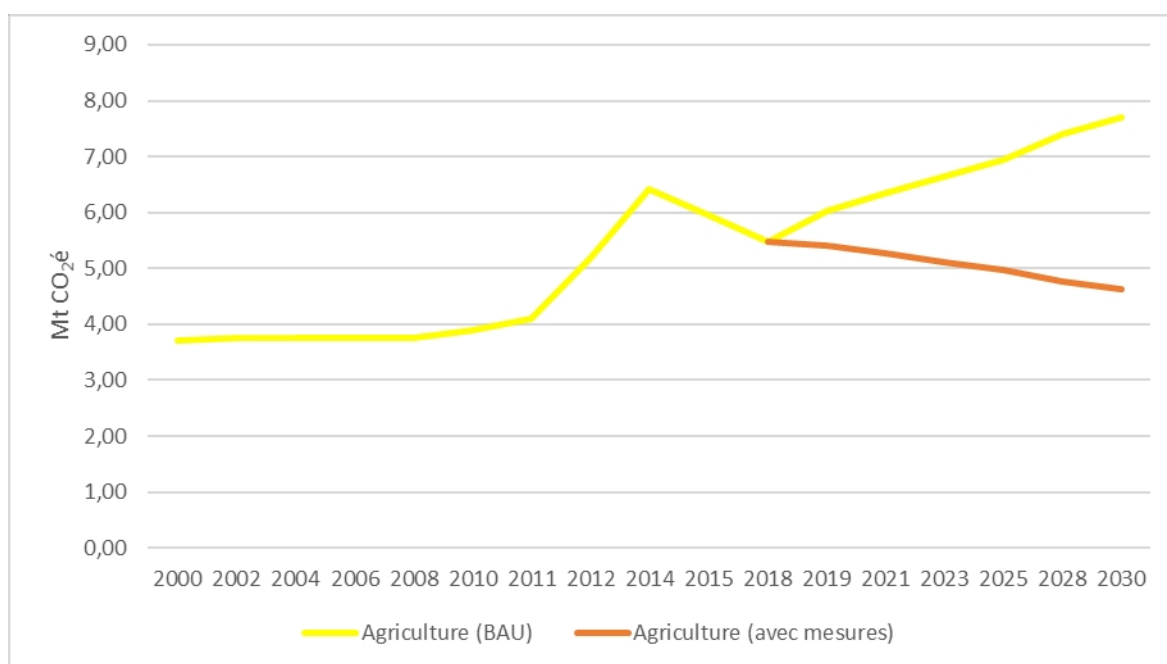


Figure 5: Projected emissions from the Agriculture sector

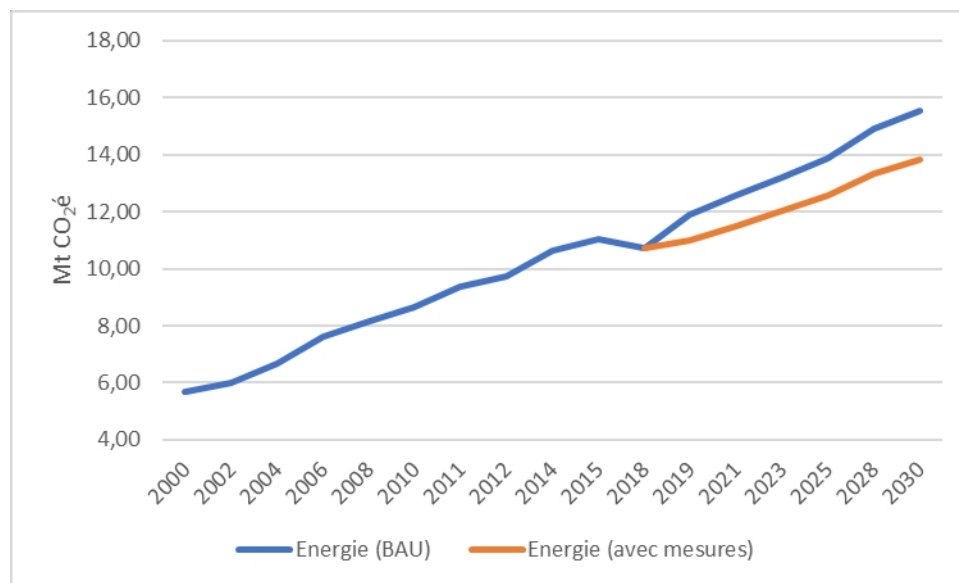


Figure 6: Emissions trends in the Energy sector

## Contribution to adaptation

The DRC is vulnerable to the various effects of climate change and does not have adequate capacity to deal with them. Indeed, the ND-GAIN index ranks the DRC 5<sup>e</sup> worldwide among the countries most vulnerable to climate change in terms of their capacity to adapt<sup>2</sup>. The impacts of climate change are already perceptible across the country, notably in the persistence of heat waves, violent rains, land degradation, particularly through erosion, the lengthening of the dry season, the increase in drought sequences during the rainy seasons, and flooding<sup>3</sup>.

Climate projections for the DRC over the coming decades predict an increase in temperatures of between 3°C and 5°C by 2100, a decrease in rainfall and an increase in its variability, as well as an increase in extreme events<sup>4</sup>. These climate variations will have a significant impact on the country's main economic sectors. The National Action Programme for Adaptation to Climate Change (PANA, 2006) identified urgent priority actions for adaptation to climate change in the water resources, forestry, agriculture and coastal zone sectors.

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

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

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

<sup>3</sup> Second national communication, 2009.

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



- Managing climate risks in small-scale farming ;
- Reducing the risk of disasters and protecting coastal areas;
- Managing water resources and environmental sanitation ;
- Strengthening the resilience of the health sector ;
- - Ensuring people have access to energy;
- Protecting energy production infrastructures; and
- Improving energy efficiency.

Fifty-two (52) priority adaptation actions are proposed in the table below. Based on global and national reporting experiences, the indicators have the potential to position the commitment and robust efforts envisaged by the DRC to meet the challenges of climate change adaptation.

Table 1: Priority adaptation actions

Sector	Nº	Actions	Estimated cost (USD billions)
Forest	1	Drawing up forest resource development projects with local communities and peoples aboriginal peoples by ensuring that legal provisions are applied	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 sustainable small-scale fishing and fish farming micro-projects	0,23
	5	Promoting projects with reduced impact on forest ecosystems with a view to diversifying income for local communities populations	0,06
	6	Involvement of local populations in the management of forest ecosystems on their territory	0,06
	7	Enhancing the traditional knowledge of local populations linked to the conservation of ecosystems	0,06
	8	Strategic coordination of programmes, plans and initiatives to adapt to climate change	0,06
	9	Promoting sustainable land management	0,50
Agriculture	10	Integrating climate change into the planning and budgeting of all sectors at various levels scales (national, provincial and local)	1,27
	11	Production and dissemination of climate-resilient seeds	0,92
	12	Drawing up a zoning programme to define the areas to be allocated specifically to agricultural activities	0,58
	13	Regular collection, processing and 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' organisations with a view to improving agricultural governance	0,29
	16	Support for setting up production and marketing chains for agricultural products with a view to improving income for rural farmers	0,17
	17	Creation and renovation of farm access tracks	0,69
	18	Promotion of (i) cultivation practices that allow farming activities to become sedentary, (ii) seeds and (iii) soil and water management techniques in agriculture.	0,23
	19	Rehabilitation and reinforcement of weather 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	Building capacity to adapt to the impacts of climate change on agricultural production and the food safety	0,06
	23	Support for research and innovation to strengthen the resilience of the agricultural sector to the effects of climate change	0,23

Sector	Nº	Actions	Estimated cost (USD billions)
		climate	
	24	Creation of Agricultural Enterprise Centres and promotion of agri-business	0,46
	25	Setting up early warning systems	0,58
	26	Setting up response measures in the event of natural disasters	2,88
	27	Setting up mechanisms to subsidise rural producers to adopt new agronomic practices. ecological	0,23
Coastal zone	28	Assessing the vulnerability of coastal ecosystems and human and institutional capacity requirements	0,58
	29	Setting up an early warning system for coastal areas (flooding, drought, soil erosion, landslides, etc.). in 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 change resilient activities generating household income	0,83
Water resources	32	Development of educational and information programmes sensitive to disasters and climate risks	0,23
	33	Development of sanitation strategy and policy	0,01
	34	Drawing up water resource development and management plans for each hydrological 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>schools programmes and villages</i>	0,35
	38	Integrating climate risks into the development of sanitation infrastructure and services	0,22
	39	Production, management and dissemination of information on water resources and agro-hydraulic developments	0,06
	40	Improving access to drinking water and basic sanitation, as well as hygiene practices for rural and suburban populations	0,23
	41	Improving access to sustainable waste management and wastewater treatment services	0,20
Health	42	Improving access to roads and public spaces and opening up rural areas	0,32
	43	Construction/refurbishment of healthcare facilities	0,92
	44	Capacity building for access to basic health services for vulnerable populations	0,88
	45	Integrating the gender approach into climate change issues	0,23
	46	Integrating the impacts of climate change into national health sector policies	0,06
Energy	47	Assessing health vulnerability and strengthening the preparedness of health systems to deal with the crisis burden of disease attributable to weather-sensitive illnesses	0,06
	48	Promotion of economic models to support renewable energies (solar, wind and biomass systems)	0,40

Sector	Nº	Actions	Estimated cost (USD billions)
	49	Improving modelling techniques for the energy transition towards energy-efficient models at At national and provincial level	0,23
	50	Development of water retention basins, construction of dykes to protect production infrastructure electricity	0,35
	51	Promoting the rational use of electrical energy, improving the management of the electricity network system and improving the quality of electricity supply. energy distribution	0,17
<b>TOTAL</b>			<b>23,08</b>

## Measurement, Notification and Verification (MNV) framework

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

The DRC will develop a NDC framework in line with the requirements of the Paris Agreement that will enable the government to effectively monitor progress on the mitigation and adaptation activities identified in this updated NDC, in line with UNFCCC reporting standards, and will put in place a framework for ongoing monitoring and evaluation to ensure that the country is making progress towards achieving its 2030 targets. This will provide 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 make it possible to monitor reference emissions (BAU scenario) as well as emissions resulting from the implementation of NDC mitigation measures. The mechanism for monitoring climate finance flows will be established.

Figure 4 below summarises the institutional arrangements for monitoring the implementation of the NDCs, including the national NDC MNV process.

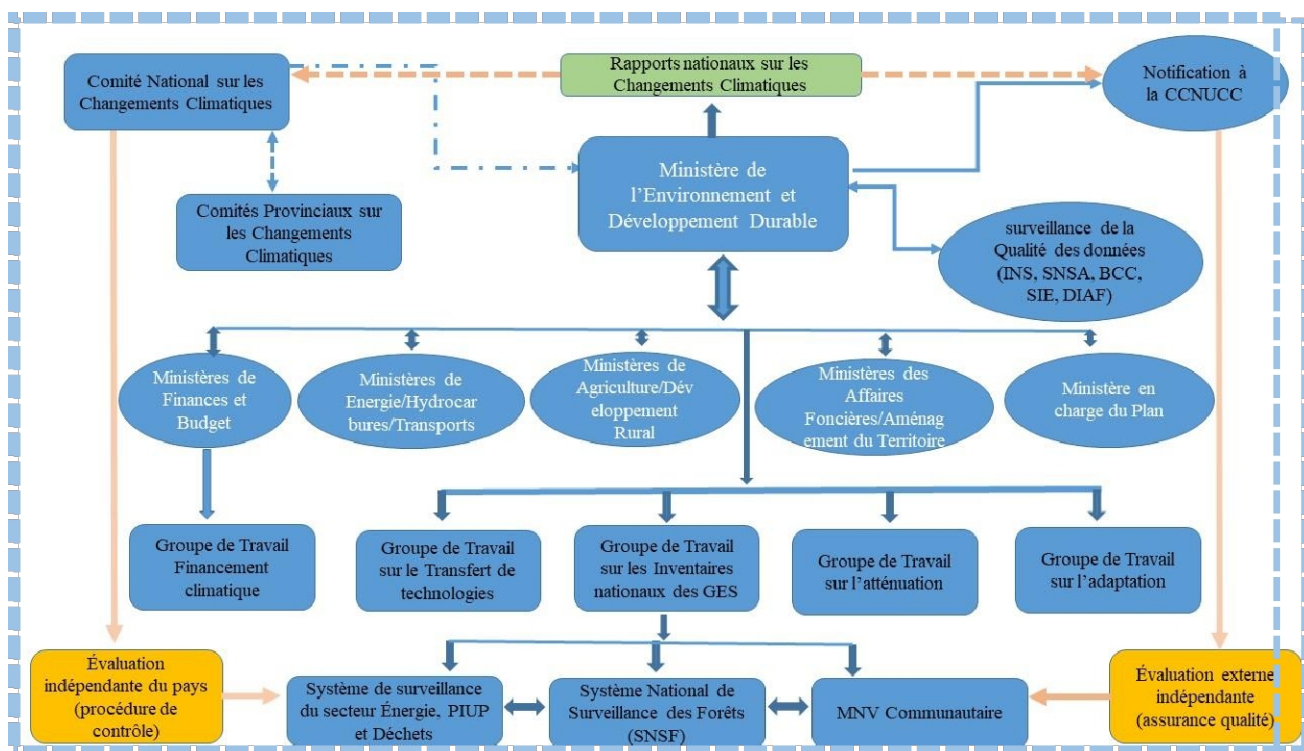


Figure 7: Institutional arrangements for monitoring the implementation of the DRC's NDCs

## Means of implementation

To achieve the conditional objectives, 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 national resources and technical capacities to step up climate action in the DRC.

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

The key elements in implementing NDC are :

- 1) Governance:** Key laws and regulations should be enacted and institutional capacity strengthened to facilitate the implementation of the NDC.
- 2) Finance:** A financing and investment framework for the NDC should be developed, along with a strategy to streamline access to public funds while mobilising private sector investment. This financing framework should facilitate effective access to international climate funds, including the Green Climate Finance Programme.
- 3) Institutional mechanism:** The NDC will be implemented under the leadership of the Ministry of the Environment and Sustainable Development (MEDD), in collaboration with the various sectoral ministries concerned at local, provincial and national level and other stakeholders, in particular young people, women and indigenous peoples.
- 4) Capacity building and technology transfer:** It will be necessary to identify capacity building needs in terms of both expertise and technology to enable the implementation of relevant policies and to optimise collaboration between key institutions and partners.
- 5) Gender equity, participation of young people and indigenous peoples: the aim is to** maximise the involvement of women, young people, indigenous peoples and other marginalised groups in the implementation of the various planned interventions, particularly in decision-making and the sharing of benefits 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 the different sectors and stakeholders, including women, indigenous peoples and young people.

## 1. Introduction

### 1.1. National development context

#### 1.1.1. National development objectives and plans

The Democratic Republic of Congo (DRC) straddles the equator, covering an area of 2,345,409 km<sup>2</sup> and encompassing most of the Congo Basin, estimated at 3.7 million km<sup>2</sup>. Its population is estimated at 91.994 million<sup>5</sup>, with a demographic growth rate of around 3.1%.

The DRC is committed to the 2030 Agenda and has drawn up its National Strategic Development Plan (NSDP) for the period 2019-2023, which is aligned with the Sustainable Development Goals (SDGs). The PNSD sets out the DRC's vision for its emergence by 2050 in three phases:

- Achieve middle-income status by 2028, with GDP per capita rising to USD 1,050;
- To achieve emerging country status by 2040, with a GDP per capita of USD 4,000;
- Join the club of developed countries in 2050, with a GDP per capita of USD 12,000.

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

- Pillar 1: Enhancing human capital, social and cultural development ;
- Pillar 2. Strengthening governance, restoring State authority and consolidating peace ;
- Pillar 3. Consolidating economic growth, diversifying and transforming the economy ;
- Pillar 4. of development, reconstruction and modernisation infrastructure; and
- Pillar 5. Protecting the environment, combating climate change and sustainable and balanced development.

The environmental protection and climate change pillar, which is essentially cross-cutting, aims to integrate environmental issues and climate change concerns into all sectoral policies and strategies in order to achieve resilient, low-carbon development. The conservation of tropical forests is a key issue that forms part of national efforts to reduce emissions from deforestation and forest degradation, including conservation, sustainable management of forests and enhancement of 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 deal with them. To this end, the Ministry of the Environment and Sustainable Development has coordinated the development of the Policy, Strategy and Action Plan to Combat Climate Change (PSPA-CC; revised version 2020). A

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<sup>5</sup> [www.ins.cd](http://www.ins.cd) (2021); INS, Annuaire statistique 2017 de la RDC

The National Adaptation Plan (NAP) for the period 2022-2026 has also been drawn up. The main aim of this plan, based on a concerted, multi-sectoral approach, is to strengthen the country's resilience and integrate climate change adaptation concerns into planning and budgeting at both national and provincial level.

The national sustainable development strategy and the government's 2021-2023 action programme are structured around 4 sectors with 62 priority areas of intervention, including: (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, and (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 secure land tenure**

With a view to promoting the rational and sustainable use of natural resources, which involves maintaining ecological processes, protecting biodiversity and adopting sustainable production systems, the DRC drew up and adopted a national spatial planning policy in 2020. This policy should lead to the zoning and definition of a master plan for optimal land use, establishing sustainable human settlements and creating a quality living environment.

In its land-use plans, the DRC will ensure that forest resources, including peatlands, are systematically integrated into a transparent consultation process in order to maintain consistency in the publication of all land-use contracts (agriculture, forestry, mining, hydrocarbons). In the forestry and other land-use sector, taking into account the implementation of nature-based solutions, the DRC will ensure synergies with spatial planning and land tenure security. In addition, in the area of land tenure, the DRC has undertaken to carry out a legal review of land concessions of more than five hectares in pilot provinces.



## **(ii) National gender policy**

In 2008, the DRC drew up and adopted its national gender policy (PNG) and its gender strategy to integrate this dimension into sectoral development plans, particularly in the agriculture and rural development sectors. Equality and the empowerment of women remain a concern for the Congolese authorities. A number of efforts still need to be made to turn this political will to improve the gender situation in the DRC into reality.

## **(iii) National Agricultural Investment Plan (PNIA)**

The DRC has drawn up 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 for reducing poverty, ensuring food and nutritional security for the Congolese people and generating sustainable employment and income. This plan provides the framework for all current and future programmes and projects in the agricultural sector. This document, which is currently being revised, constitutes the national planning framework for 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 enacted. It institutes the liberalisation and full opening of the electricity market to the private sector and also allows:

- the distribution of competing powers in the sector, between the State, the provinces and the decentralised territorial authorities; and
- the creation of an Electricity Regulatory Authority 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 might affect their education, health, full development and fulfilment.

The 9th area of this policy, entitled "Youth, environmental protection and sustainable development", the specific objective of which is to improve the living environment and environment of young people, is structured around the following three main areas:

- Educating young people to protect the environment;
- Improving the living environment for young people, in particular housing, drinking water, energy and sanitation; and
- Promoting environmental protection and voluntary work among young people.

## **(vi) National Sanitation Policy (PONA)**

The National Sanitation Policy (PONA), drawn up in 2013, aims to help improve the population's access to adequate sanitation services and infrastructure. Specifically, this involves, among other things:

- Promote the sanitation sector to all stakeholders;
- Set up mechanisms to mobilise endogenous and exogenous financial resources in the sanitation sector;
- Improving governance in the sanitation sector;
- To bring about a change in mentality and behaviour with regard to sanitation;
- Harmonise the different approaches in the sanitation sector; and
- Promote the development and implementation of sub-sector programmes.

The Ministry of the Environment and Sustainable Development (MEDD), through its Sanitation Directorate (DAS), has national responsibility for the sanitation sector, including municipal waste management, and is therefore 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 de Voirie et de Drainage (OVD), which is involved in cleaning gutters, rivers and major collectors. Because of the dumping of waste on roadsides and in drains, the health environment in modest or poor residential areas is particularly poor.

### **1.1.2. Main socio-economic and environmental development challenges**

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

Most of the actions taken to protect the environment and combat climate change have been financed by various development partners, and have focused on the conservation of forests and biodiversity by building capacity, in particular the development of planning tools, the sustainable management of natural resources and strengthening the resilience of ecosystems and communities.

The main challenges in this area remain: (i) mobilising financial resources to implement the main legal and institutional reforms; (ii) drafting a text to implement the framework law on the environment in the DRC; (iii) strengthening collaboration and intersectoral coordination between the various sectors (mining, agriculture, forestry); (iv) the definition of a genuine policy in this sector, and (v) the definition of a genuine policy in the forestry sector, and (v) the effective implementation of projects such as the Ibi Batéké project registered with the Clean Development Mechanism (CDM); the projects to improve carbonisation and recover flaring gas at Muanda as part of the Nationally Appropriate Mitigation Actions (NAMA) process; and the formulation of the Low Carbon Development Strategy (LEDS), all of which are planned.

On the economic front, the DRC's economic growth rate has fallen steadily, to 0.8% in 2020, exacerbated by the COVID-19 pandemic, compared with 4.4% previously.

in 2019. However, the mining sector is reported to have grown by 6.9% in 2020 (compared with 1% in 2019). On the other hand, other economic sectors contracted by 1.6% (compared with 5.7% in 2019) due to restrictions caused by the pandemic, the confinement of business activity and limits on public spending.

Public spending on the agricultural and rural sector is estimated at 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 difficult target for the DRC to achieve. The agricultural and rural sector employs almost 70% of the country's working population. Moreover, its development remains crucial to poverty reduction, as it has been established that agricultural production will grow faster than the trend scenario adopted by the PNIA (2013-2020), which predicts that "if current trends continue, the agricultural sector will continue to grow at a modest rate of 3% per year".

The efforts that will be needed to accelerate agricultural growth (+6%/year) to bring the DRC to a balanced diet by 2025 (to feed 116 million consumers) will not be possible without rapid modernisation of agriculture. Cultivated land will have to be doubled from 8 to 16 million hectares, which would represent annual growth of around 6%, while the number of farm households is growing more slowly (+2%/year) than the average population growth rate (+3%/year), characterised by a rapid rate of urbanisation (+5%/year)<sup>6</sup>.

This sector contributes 38% of GDP and over 60% of job creation. Although it is the main means of subsistence in rural areas, it fails to ensure the country's food independence and to generate sufficient income and sustainable employment. The agricultural sector is essentially characterised by rudimentary and itinerant slash-and-burn farming systems for subsistence production, exacerbated by the scarcity of agricultural inputs, the isolation of production areas, particularly due to the deterioration of rural tracks, the growing impoverishment of the farming community, the lack of supervision and the impact of climate change.

Despite the progress made, the fact remains that :

- The social situation in the DRC is precarious and does not appear to have improved significantly over the last two decades, according to the MDG report<sup>7</sup>. The situation is characterised by the poverty of the population, which contrasts with the country's immense natural potential, and is more pronounced in rural areas with high population growth, which puts pressure 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 Human Development Report 2020. The proportion of the population not meeting the minimum level of calorie intake rose from 31% to 73% during the 1990s. Although food insecurity has subsequently declined, it remains high and

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

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

affects around 76% of the population, while food accounts for 62.3% of the total expenditure of Congolese households<sup>8</sup> ;

- The rate of access to electricity remains very low: 9% nationally (1% in rural areas, 30% in towns), compared with an average of 24.6% in sub-Saharan Africa;
- Finally, unemployment, especially among young people (aged 15-24<sup>9</sup> ), due to strong demographic growth, remains at a very high level - 18% nationally - and particularly affects young urban dwellers (32%).

The many reforms undertaken and the strong economic growth recorded over the last decade are evidence of 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 lies between latitudes 5°20' north and 13°17' south, and longitudes 12°15' and 31°15' east of the Greenwich meridian. It shares 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 seaboard. Under the revised constitution of February 2006, the Democratic Republic of Congo is made up of the city of Kinshasa and ten (25) provinces, each with legal personality (Figure 1).

Its topography is dominated in the east by two mountain ranges (Virunga and Mitumba) and a region of large lakes in the Great Rift and stepped plateaux that form a wide depression in the centre, the "Central Cuvette". This is covered by dense tropical forest, dominated by large 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 basins), collects more than 80% of its water from tributaries (around thirty major rivers) of the Congo River, which is 4,700 km long, with an average flow of 41,000 m<sup>3</sup> of water per second at its outlet into the Atlantic Ocean. There are also 15 lakes throughout the country, with a total surface area of 180,000 km<sup>2</sup> . Its dense hydrographic network benefits from a rainfall pattern that is well distributed throughout the country.

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<sup>8</sup> DRC, 2011.

<sup>9</sup> Jonas Kibala Kuma (2020), Pauvreté et chômage en RDC : état de lieux, analyses et perspectives, p. 14

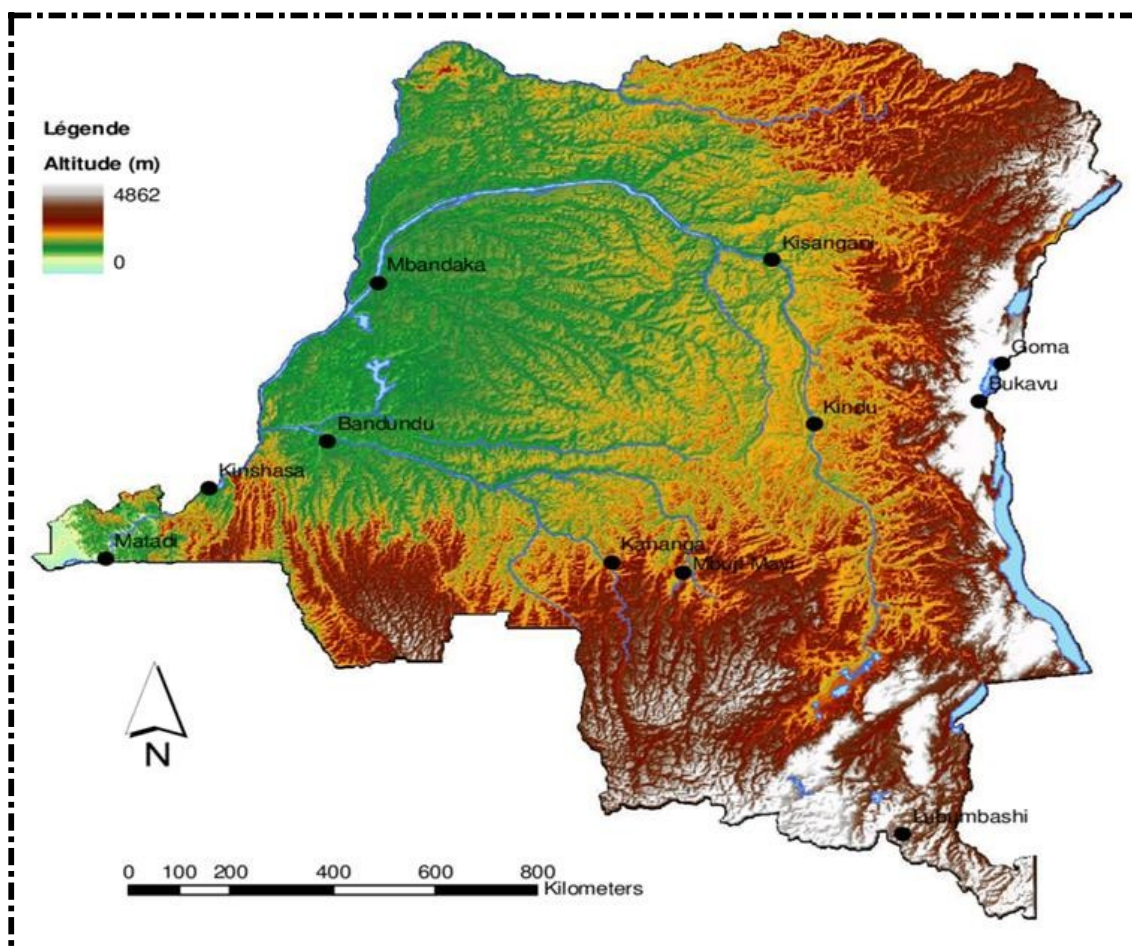


*Figure 8: Administrative map of the DRC*

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

The soils of the DRC are very varied, covering some 227 million hectares. They have been classified according to a morphogenetic system that combines morphological criteria that can be observed or measured in 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).

The central basin of the Congo Basin, which includes the DRC and the Republic of Congo, is home to the world's largest tropical peat bog. It covers an area of almost 145,000 km<sup>2</sup> with a large carbon stock and a potential source of greenhouse gases estimated at 30 gigatonnes, equivalent to two (2) years of global greenhouse gas (GHG) emissions. The DRC alone has 2/3 of this peatland, i.e. around 101,500 km<sup>2</sup>.



*Figure 9: Relief of the DRC*

Source: US Geological Survey, 2003

The DRC is endowed with immense natural resources, including :

- *diversified subsoil resources*, including uranium, copper, zinc, cobalt, gold, diamonds, tin, columbite-tantalite (coltan), chromium, manganese, wolframite, silver, cadmium, lithium, coal and pyrochlore, etc.
- offshore oil on the Atlantic coast.
- a rich diversity of flora :
  - around 152 million hectares of natural forest (10% of all the world's tropical forests and 67% of the national territory; dense rainforests cover almost 99 million hectares, including just over 83 million at low altitude) (De Wasseige et al., 2009);
  - The vegetation is dominated by large formations including swamp forests, rain forests, afro-montane forests, dry forests and savannahs;
  - all phyla combined, there are almost 377 families, 2,196 genera and 10,324 species.
- a wealth of wildlife (MEDD, 2013)<sup>10</sup> characterised by:
  - 352 species of reptiles, including 33 endemic species; 168 species of amphibians,

<sup>10</sup> Ministère de l'Environnement, Conservation de la Nature et Tourisme, 2013, Programme National Environnement, Forêts, Eaux et Biodiversité "PNEFEB" -2<sup>ème</sup> generation



- 1086 bird species, 23 of which are endemic;
- 421 species of mammals, 28 of which are endemic, and over a thousand species of fish.

## 2.2. Climate profile

The DRC is located in the Intertropical Convergence Zone (ITCZ), which creates extreme climatic variability in the country. It has a hot, humid climate over most of its territory and abundant rainfall, with 140 to 160 days of rain a year. Its climate system is as follows:

- 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, the climate is tropical, with a dry season that lasts longer the further you are from the equator (4 months in the west and more than 5 months in the south-east, where less than 1,000 mm of rainfall is recorded each year);
- In the mountainous regions of the east, atmospheric conditions vary with altitude, where rainfall can reach 3,000 mm per year and the average temperature can drop by as much as 1°C as the altitude rises by 180 m ;
- the coastal zone has the driest climate (810 mm at Banana), where the effects of the cold Benguela current are felt.

The average annual temperature has risen slightly at a rate of +0.17°C per decade over the last 30 years. For the future, projections from global climate models suggest a sharp average increase in temperature. By the end of the century, warming of between +1.7 and +4.5°C (compared with the reference period from 1971 to 2000) is likely. In addition, a sharp increase in the duration of heat waves and a sharp reduction in the duration of cold spells are predicted (Haensler et al., 2013)<sup>11</sup>.

As far as total annual precipitation is concerned, no substantial change has been observed over the last 30 years. For the future, most climate models predict a trend towards a slight increase in total annual precipitation. By the end of the century, a change in total annual precipitation of between 0 and +8% (compared with the reference period of 1971 to 2000) is likely. In addition, the projections suggest a trend towards more intense and considerably more frequent rainfall, while no clear trend is forecast in terms of the duration of drought periods (idem).

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<sup>11</sup> 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 is still one of the least developed countries, with almost 70% of the population dependent almost exclusively on agriculture and forestry resources for their survival.

Around 67% of the country is covered by tropical forests, representing 60% of the forests in the Congo Basin and almost 10% of this resource worldwide. This makes the DRC the second largest tropical forest country in the world.

Since the 1970s, the DRC has experienced a number of multifaceted crises that have affected every sector of national life. These repeated crises have plunged the country into a serious economic and social situation that is, among other things, at the root of the widespread poverty of the population and which ranks the DRC at the bottom of the Human Development Index (HDI), at 179<sup>ème</sup> out of 189 countries (UNDP, 2019).

### 2.3.1. Agriculture

The DRC has over 80 million hectares of arable land, of which only 10% is currently being farmed. The diversity of its climatic system and its extensive hydrographic network mean that a wide range of agricultural crops can be grown. The savannahs, both grassy and wooded, are capable of supporting a livestock population of around 40 million head of cattle<sup>(12)</sup>. This sector has suffered a long decline, exacerbated by conflict and the abandonment of large farms, with agricultural productivity falling by 60% between 1960 and 2006.

Farming is essentially rain-fed and peasant-based, with subsistence food production using rudimentary, low-yield, low-input production equipment. These farms are spread over between 4 and 7 million hectares and are organised by farming households, each of which farms an average of 1.5 hectares per year<sup>(13)</sup>.

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

The country's livestock production comes mainly from small and large livestock and from poultry. Pigs contribute 34.5%, goats 24%, cattle 22.3%, poultry 15% and sheep 3.9%<sup>(14)</sup>.

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(12)Ministry of Agriculture (2009), Notes on agricultural policy

(13)Ditto

(14) Programme national de relance du secteur agricole et rural (PNSAR) 1997-2001: monographie, Volume 1.



Small livestock and poultry have the advantage of offering farmers products on a regular and frequent basis, enabling 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, i.e. just over 30%, corresponds to an average annual availability of 5.2 kg per inhabitant, well below the international standard set at 13 kg per inhabitant<sup>(15)</sup>.

### 2.3.2. Forestry and other land uses

The Congolese forests are spread out on either side of the equatorial line and thus comprise a variety of ecosystems. Evergreen and semi-deciduous rainforests occupy much of the central and western regions, vast expanses of edaphic forests grow in the north-west along the Congo River and its tributaries, while pre-mountain and mountain forests extend over the eastern plateaux and the slopes of the Mitumba Mountains. The richest and most continuous forest massif (around 100 million hectares) is confined to the central basin.

Estimated at around 152 million hectares of natural forests (MEDD, 2016), they represent around 10% of all tropical forests in the world and more than 62% of those in Africa. Its rate of deforestation, which has been relatively low over the last 30 years, is estimated at between 0.4% in 2001 and 0.32% in 2005, compared with 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 Forestry Code, which deals with clearing, forest degradation and erosion problems. The code prohibits "any act of deforestation in areas exposed to the risk of erosion and flooding; any deforestation within a distance of 50 metres on either side of watercourses and within a radius of 100 metres around their sources". The Code also stipulates that "any deforestation must be compensated by reforestation equivalent in quality and area to the initial forest cover (...) and requires a deforestation permit to be obtained for an area greater than 2 ha".

The forestry sector in the DRC has the potential to make a significant contribution to the diversification and recovery of the national economy. Despite its enormous potential, the sector's contribution to reducing poverty among the Congolese people remains timid, if not insignificant. This is partly due to the fact that, for several decades, the forestry sector has not attracted much interest from political decision-makers, which has not enabled the sector to benefit from all the attention to which it is legitimately entitled, following the example of other sectors of the national economy, in this case the mining sector.

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<sup>(15)</sup> Ministry of Agriculture, 2009, Agricultural Policy Notes, 71p.

### 2.3.3. Energy

The DRC has enormous and diversified potential in terms of energy resources<sup>16</sup>, the sustainable management of which represents a major challenge:

- hydroelectric resources, with an estimated potential of 110 GW (44% of which is concentrated in the Inga site alone, located in Kongo-Central Province), equivalent to 30 million tonnes of oil per year;
- biomass, with around 152 million hectares of natural forest;
- mineral coal, with reserves estimated at 720 million tonnes,
- oil, with reserves estimated at 1.5 billion barrels,
- methane gas reserves in the Coastal Basin, estimated at 10 billion m<sup>3</sup> at sea and 20 billion m<sup>3</sup> in Lake Kivu (almost 50 million cubic metres (Nm )),<sup>3</sup>
- uranium ore with significant reserves,
- geothermal resources ;
- oil shale and tar sands, the reserves of which are not well known; and
- solar potential with a sunshine band of between 3500 and 6000 Wp/m /d<sup>2</sup>

In terms of energy consumption, the PDGIE report (2018) shows that wood energy predominates, accounting for 94.2% in 2018.

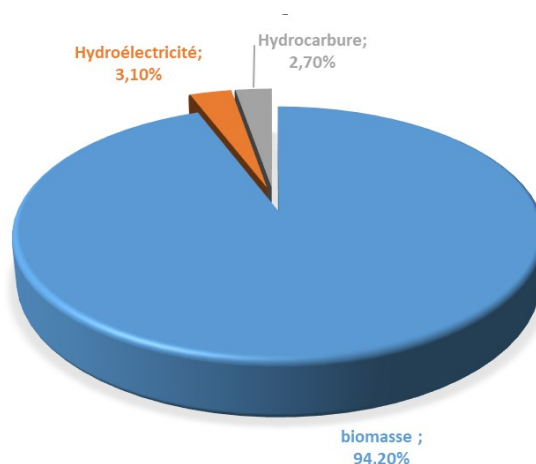


Figure 10: DRC's energy balance for 2018

Electricity is largely generated by the Société Nationale d'Electricité (SNEL), with an installed capacity of 2,456 MW. A number of independent private producers, such as Electricité du Congo (EDC) for the town of Tshikapa, SENOKI in Butembo, SOKIMO, Energie du Kasai (ENERKA) for the town of Mbuji-Mayi, Electricité du Nord Kivu (ENK), Virunga Sarl, NURU Sarl, Caritas Développement, etc., and a number of self-generators, such as Sucrière de Kwilu-Ngou, are also involved. and a number of self-producers such as Sucrière de Kwilu-Ngongo, PERENCO, MIBA, Kibali Gold Mining, Gécamines, certain religious denominations, Société Nationale des Chemins de fer (SNCC), etc. However, the population's rate of access to electricity, one of the lowest in the world, is estimated at 9% (SE4ALL-RDC, 2019).

<sup>16</sup> ATLAS of renewable energies in the DRC 2nd Edition 2016

#### 2.3.4. Transport

Transport infrastructure in the DRC is among the least dense, dilapidated and impassable. In many of the country's provinces, connectivity to the capital, Kinshasa, by road is difficult, and most provinces are not linked to each other. Despite having one of the largest river networks in the world, river transport is often hampered by high levels of silting and 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, secure storage and convenient and affordable bicycle hire) and the rail network is virtually abandoned or destroyed. Motorised vehicles depend mainly on private cars.

Vehicle fleet statistics up to 2015 show a total of 1.64 million vehicles registered nationwide, mainly made up of private cars (INS, 2015).

Public transport includes public and private buses, minivans and exclusive and shared taxis, all of which operate 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 reach of public transport compared to the attractiveness of owning a private car.

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

In addition, these observations reflect continuous stop-start driving patterns, leading to 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 divided as follows:

- 58,509 km of roads of general interest, of which around 3,000 km are surfaced.
- 7,400 km of urban roads ;
- 87,300 km of local and farm roads

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

As for river and lake activities, the DRC has nearly twenty service or commercial ports in operation, including Matadi, Boma, Kinshasa, Ilebo, Kalemie, Uvira, Goma, Bukavu, Kisangani, Mbandaka, Ubundu, Kindu and Mushimbakye in Baraka. Most of these ports are under the authority of the Société Congolaise des Transports et Ports (SCTP). The main ports in the south-east of the country are governed by the Société nationale des chemins de fer du Congo (SNCC).

The port of Matadi is the country's industrial entry and exit point. It is linked to the port of Kinshasa by road and rail. The port of Kinshasa handles around 78% of boats from the interior of the country.

#### 2.3.5. Industry

Although the DRC's industrial fabric remains embryonic, this sector, like agriculture, infrastructure, energy, health, education, housing and others, is a priority for the DRC government. The strategy for developing the industrial sector focuses mainly on the creation of Special Economic Zones (ZES), agro-industrial parks and growth centres.

The infrastructure deficit is having an impact on the DRC's industrial development, particularly manufacturing. Manufacturing accounted for just 14% of GDP in 2018, or less than USD 12 per capita. This low level illustrates the obvious difficulties faced by entrepreneurs, particularly in terms of access to electricity and public transport infrastructure (roads, railways, airports, rivers and lakes). The repercussions speak for themselves, particularly in terms of economic competitiveness and job creation. 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 providing proactive support for this sub-sector, and to improve the business climate in order to attract more foreign direct investment (FDI) (MDG Report, 2020).

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

As a driver of growth and a major contributor to the national budget, the DRC's mining sector is one of the country's strategic sectors. According to statistics, between 2003 and 2017, mining production rose from 9,370 tonnes to more than one million tonnes of copper! That's an increase of 10.75% (INS, 2017).

### 3. The DRC's vision for climate change

The DRC's vision for combating 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 significant 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 firmly 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 Article 4.<sup>17</sup> .

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. It also submitted its first three national communications to the UNFCCC, in 2001, 2009 and 2015 respectively, and its National Adaptation Programme of Action (NAPA) in 2006. It also submitted its Reference Emission Level for Forests (NERF) 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. Consequently, adaptation to climate change is a major concern and a 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 Nationally Determined Expected Contribution (NDEF) to the UNFCCC, setting out its adaptation and mitigation objectives. In 2017, this 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+ Framework Strategy (MEDD, 2012) and other key national guidance documents. The reduction target, which was entirely conditional, was 17%, taking into account three main sectors: Energy, Agriculture and Forestry, associated with the following gases: CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O over the period 2021-2030.

This NDC, with a reduction target set at 21% (conditional at 19%, and unconditional at 2%), updates and strengthens 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. In addition to the three sectors mentioned above (Agriculture, Forestry and Energy), it also includes Waste.

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

## 4.1. Attenuation

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

The mitigation contributions presented in this revised NDC are based on the projection of a relative reduction in GHG emissions between 2018-2030 compared with the reference emissions estimated using the 2006 IPCC guidelines<sup>18</sup> representing the national trajectory in the absence of mitigation measures (BAU).

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

The projections used in this revised NDC are based on an extrapolation of emissions from the reference period of the first Updated Biennial Report and the DRC's national greenhouse gas inventories. This is a linear, simple, transparent, intuitive and easily reproducible medium-term projection to 2030, based on the IPCC Tier 1 methodology, which will evolve according to a business-as-usual scenario (normal course of business without mitigation measures).

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. Two scenarios have been developed for this purpose: the BAU scenario and the abatement scenario. The model systematically links the specific demand for energy to produce the various 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 in order to characterise possible changes in the economy: the continuity scenario, also known as the business-as-usual scenario (BAU), the scenario that reflects the government's vision (optimistic scenario) and the intermediate scenario between the first two, the alternative scenario.

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<sup>18</sup> LD 2006 IPCC

### **(i) Continuity** scenario<sup>19</sup>

This scenario is based on a continuation of the current situation, in which the rate of economic growth is certainly high, but suffers from fluctuations linked to the hazardous turns of the world markets. In the light of its 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. Reforms need to be deepened to ensure more effective governance. Major changes will have to be made to the production system, and the quality of human capital will also have to be substantially improved.

The main assumptions underlying this scenario are as follows:

- The mining sector continues to be the main driver of economic growth, but its contribution is gradually declining;
- Agricultural activity continues to develop, but its expansion is 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 through wholesale and retail trade (against a backdrop of deterioration in the current account) and transport and telecoms;
- Tax revenues from the exploitation of natural resources remain marginal;
- Progress is being made in the area of governance (political and economic), but it is relatively slow and limits the rate of total investment;
- The population continues to grow at an average annual rate of 3%, as has been the case over the last fifteen years, which implies that the total fertility rate (TFR) has remained virtually unchanged;
- The population movements caused by conflict are subsiding and the social fabric is being rebuilt;
- The country's political and security situation is stable, as is that of the Central African region.

### **(ii) Scenario reflecting the government's vision.**

This second scenario is optimistic in that it proposes to highlight the various efforts to be made by the authorities. For the DRC to develop in 2050 according to the sequences defined by the government, it will be necessary to envisage - courageously and relentlessly - a set of coherent and sustained actions over time to change its political, institutional, economic and financial landscape. Maintaining peace and reinforcing the security of people and their property are two fundamental elements of the action to be taken by the government to set the country firmly on the path to development. On the macroeconomic front, inflation must be contained and the exchange rate must not suffer any major shifts. To achieve this, the fiscal space needs to be considerably enlarged.

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<sup>19</sup> Vision of the DRC to 2050, (PNSD, 2016)

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

**(iii) Alternative scenario.**

In this third scenario, described as alternative, we assume that the country becomes a middle-income country in 2025 and an emerging country in 2030 instead of 2030. In 2050, the country becomes developed. This change in the time horizons for the expected progress has an impact on the growth rates to be posted by the economy, as well as on the policies to be implemented. Despite the change in the length of the first sequence of the trajectory, considerable efforts will be required to ensure that the DRC progresses as its government intends. On the macroeconomic front, there will be a need to maintain rigour in the management of public finances and flexibility in the conduct of monetary policy, as growth performance will require inflation to average no more than 3.5% and an exchange rate that does not move by more than 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 broadening of the value creation chain and more efficient exploitation of hydrocarbons;
- The construction and public works sector is undergoing remarkable expansion thanks to combined efforts to expand the State's fiscal space and mobilise new sources of infrastructure funding (PPPs and viable sovereign loans);
- Manufacturing industries are developing at a sustained pace and are penetrating other markets;
- The tertiary sector remains dynamic thanks to the effects of reconstruction, modernisation and infrastructure development;
- The structure of GDP is gradually changing (the secondary sector will become the main pillar of growth in 2050);
- Governance is improving rapidly and steadily against the backdrop of a coherent set of reforms affecting institutions and the way the economy operates;
- Social policies are being effectively implemented to lower the wealth tax and make the most of the demographic dividend;
- The return of displaced people is possible;
- The political and security context is calm, both in the country and in Central Africa.

Of the three PNSD scenarios only the alternative scenario has been considered 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 Allowance

This scenario sets out to highlight the various efforts that the DRC government will have to make 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 them in several ways:

- In the area of forestry and other land uses, the assumption is based on the REDD+ strategy, which is based on studies by McKinsey et al (2009)<sup>20</sup> and also on the assumptions envisaged in the NERF document, whose projections of annual growth in emissions due to deforestation are estimated at 50 MtCO<sub>2e</sub> ;
- The forestry sector could achieve a cumulative reduction in emissions of 2.2 to 2.5 Gt CO<sub>2e</sub> by 2030;
- The portion of emissions that cannot be reduced may be offset by the effects of afforestation and reforestation projects designed to sequester carbon, up to an estimated cumulative sequestration potential of 1.2 to 1.4 Gt CO<sub>2e</sub> ;
- By 2030, the combined effect of potential mitigation and sequestration levers could both offset total emissions estimated at 410 to 700 Mt CO<sub>2e</sub> according to the BAU reference scenario, and create a carbon sink with a capacity of around 20 Mt CO<sub>2e</sub> ;
- The BAU reference scenario for the evolution of degradation and deforestation in the DRC and related emissions has been developed on the basis of 'voluntarist' assumptions for 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, the plan is to double the area under cultivation from 8 to 16 million hectares, in order to achieve accelerated growth (+6%/year) and thus ensure a balanced food supply by 2025 (feeding 116 million consumers) by modernising the sector.
- In the energy sector, mitigation efforts could be concentrated in the industrial, transport and residential sectors, based on the following assumptions:
  - Greater reduction in the energy intensity of petroleum products, specific uses of electricity and the use of heat. This reflects a much more efficient improvement in the energy intensity of the economy.
  - In the agricultural sector, the reduction will relate much more to the management of agricultural residues, as the agricultural development programme provides for an increase in the area under cultivation.
  - In the waste sector, for the abatement scenario (organisation of the sector: access for 60% of households to the waste management system, by developing operational mechanisms in at least 10 provinces.

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<sup>20</sup> Methodology taken from the McKinsey GHG Abatement Cost Curve V2.0, McKinsey & Company, 2009

## 4.2. Adaptation

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

The lessons learned from the NAPA (agriculture, protection of the coastal zone and women and children) have made it possible to understand 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 drawing up the DRC's initial NAP and the various specific studies carried out for this purpose, in particular (i) the institutional assessment of the obstacles and needs for integrating 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 financing adaptation, have enabled further reflection on the relevant actions envisaged in this NDC and the establishment of financing requirements.

Finally, the selection of adaptation interventions, parameters 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 stakeholders 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 leading to a reduction in emissions in accordance with its national circumstances and capacities. This section consists of a brief review of the analysis of greenhouse gas (GHG) emission trends in the sectors for which measures have been identified and proposes consequent mitigation strategies. It also presents other initiatives relating to greenhouse gas mitigation in the DRC.

The mitigation measures implemented by the DRC mainly concern the forestry sector, in particular the implementation of its national strategy for reducing emissions from deforestation and forest degradation (REDD+). In addition to the REDD+ strategy, the DRC's nationally determined contribution presents certain mitigation measures and actions in the energy, transport, agriculture and waste sectors.

To date, however, these few initiatives are less well documented. However, the DRC is committed to improving its data collection and management system and to formalising the arrangements.

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

In addition, the DRC does not have a specific methodology and associated hypotheses for assessing the effects of the planned actions. Consequently, capacity building for project promoters and various stakeholders is essential at national level to improve the monitoring and reporting of sectoral mitigation activities.

### 5.1. Analysis of trends in greenhouse gas (GHG) emissions.

The revised 1996 IPCC Guidelines were used to estimate the GHG emissions reported in the DRC's three previous National Communications on climate change. The first Biennial Update Report, on the other hand, is based on the IPCC Tier 1 approach in accordance with the 2006 IPCC Guidelines and its improvements<sup>21</sup>.

An analysis of historical trends in GHG emissions, carried out as part of the 1<sup>er</sup> Biennial Report Update for the DRC, which aims to be an emerging country by 2030, as part of a vision of development towards an increasingly low-carbon economy, shows that, during the 2000-2018 period (table 3), the country's emissions were dominated by the Forestry and Other Land Use (FOL) sector, which accounted for 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: Trends in the DRC's GHG emissions by sector for the period 2000-2018 (Mt CO<sub>2</sub> eq)*

	<b>Energy</b>	<b>PIUP<sup>22</sup></b>	<b>Agriculture</b>	<b>Drill</b>	<b>Waste</b>
<b>2000</b>	3,36	0,09	3,70	483,74	39,79
<b>2001</b>	3,69	0,11	3,86	483,74	51,47
<b>2002</b>	4,02	0,14	3,76	483,74	51,83
<b>2003</b>	4,35	0,18	3,76	483,74	53,08
<b>2004</b>	4,68	0,24	3,75	483,74	54,33
<b>2005</b>	5,01	0,29	3,75	483,74	56,49
<b>2006</b>	5,34	0,33	3,76	483,74	59,70
<b>2007</b>	5,67	0,34	3,77	483,74	64,28
<b>2008</b>	6,00	0,24	3,76	483,74	69,87
<b>2009</b>	6,33	0,27	3,76	483,74	76,94
<b>2010</b>	6,66	0,27	3,89	483,74	82,24
<b>2011</b>	6,99	0,26	4,09	830,53	88,61
<b>2012</b>	7,32	0,23	5,19	830,53	96,70
<b>2013</b>	7,65	0,25	5,73	830,53	106,47
<b>2014</b>	7,98	0,19	6,42	830,53	116,84
<b>2015</b>	8,31	0,23	5,97	529,23	128,87
<b>2016</b>	8,64	0,15	5,99	529,23	140,82

<sup>21</sup>IPCC 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.

<sup>22</sup> Industrial Processes and Product Use

	Energy	PIUP <sup>22</sup>	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 upward trend in GHG emissions from the non-forestry sectors, i.e. energy with transport, residential, and manufacturing industry, Industrial Processes and Product Use (IPUP), agriculture and waste treatment, is explained in table 2 below:

Table 3: Contribution of non-forestry sectors to emissions trends

Sector	Categories	Contributions to emissions
Energy	Transport	The vehicle fleet consists mainly of second-hand vehicles, but also, through the increase in personal vehicle ownership
	Manufacturing industry	Sporadic commissioning of thermal power stations to compensate for untimely power cuts hydroelectricity in industry
Agriculture	Enteric fermentation	For types of grass-based forage (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. energy (volatile fatty acids).
	Farm from soils management	Continued increase in farmland, more characterised by an increase in the number of farms, consisting of abattis in the forest zone and along the major rivers in the interior of the country, all linked to a high growth rate
	Agricultural residue burning	demographic
	Growing rice	Increase in irrigated perimeter of rice growing and demand
Waste	Solid waste disposal sites	Linked to population growth and lack of organisation in the sector
Sector	Categories	Contributions to emissions

Industrial Processes and Product uses	The production from cement	Increased demand for property and the number of cement production units across the country
	The lime production from	

The increase in methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) emissions in the residential sector, due to population growth, is the result of strong demand for wood energy, particularly to meet household cooking needs.

## 5.2. GHG mitigation measures for the period 2021-2030

In view of the development dynamic to which the DRC is committed by 2030, its efforts will have to materialise in the implementation of various mitigation measures, mainly in the Forestry and other Land Use, and Waste sectors, followed by Energy and Agriculture.

It is in this context that the DRC has drawn up its National REDD+ Framework Strategy and its Low Carbon Development Strategy, for which two mitigation measures have been identified in the energy sector as part of the Nationally Appropriate Mitigation Actions (NAMAs) initiative: the recovery of flared gas from oil platforms in Muanda, and the improvement of carbonisation techniques.

The DRC also intends to implement a national energy policy framework that specifically targets clean cooking strategies (LPG, electric cookers, etc.), while taking into account concerns about increasing the share of renewable energy in its energy mix, promoting energy efficiency, improving public transport and recovering energy from waste.

Accordingly, the DRC has committed 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 CO<sub>2e</sub> by 2030.

The main levers for action identified relate essentially to :

### A. Strand I: Forestry and forest-related activities :

This component is expected to contribute between 182 and 192 Mt CO<sub>2e</sub> to the total emissions mitigation potential in 2030 (McKinsey et al., 2009). This potential has been estimated by forestry activity as follows:

- i) **Industrial and small-scale legal logging:** around 19 Mt CO<sub>2e</sub> thanks to the reduction in logging volumes per hectare to sustainable levels with very low emissions (from 15 to 10 m<sup>3</sup> per hectare).
- ii) **Illegal logging:** reduction potential of around 22 to 23 Mt CO<sub>2e</sub>. This potential can be broken down into several region-specific levers. The first involves eradicating illegal logging destined for neighbouring countries (Rwanda, Burundi, Uganda) by stepping up controls between now and 2030 in the provinces of North and South Kivu and 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 logging. The third lever is reforestation to sustainably supply lower quality timber to local markets, mainly urban populations.
- iii) **Other degradation and deforestation activities** linked to the population's activities (sustainable hunting, for example) or to the use of techniques to combat bush fires.
- iv) **Afforestation** or afforestation: potential to reduce emissions by 61 to 65 Mt CO<sub>2e</sub> in marginal areas (shrub savannahs and savannah-forest mosaics) of around 7 million ha.
- v) **Reforestation** (reforestation): emission reduction potential of 80 to 84 Mt CO<sub>2e</sub> in 4 million ha of degraded or deforested forests. In this context, the DRC plans to spatially identify these forests and incorporate them into national legislation by 2025, thereby establishing at least 2.5 million hectares of local community forest concessions by 2025, following a good practice guide approved by 2023.

**B. Component II: Agriculture and livestock farming in forest areas:** four mitigation levers contributing 180 to 187 Mt CO<sub>2e</sub> to the total mitigation potential (McKinsey et al., 2009):

- i) **Food crop farming:** mainly shifting cultivation and slash-and-burn: potential to reduce emissions by 15 to 17 Mt CO<sub>2e</sub> in 2030, based on a programme to improve productivity affecting 50% of food crop farms.
- ii) **Extensive small-scale commercial farming**, mainly for the local market: reduction potential of around 65 to 70 Mt CO<sub>2e</sub>, linked to the implementation of two types of programme to increase productivity, affecting around 75% of farms. The first programme, covering around 25% of farms, aims to set up extension programmes and supply inputs over a 20-year period. 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 around 80 Mt CO<sub>2e</sub>. This reduction results from the relocation to shrub savannahs or savannah-forest mosaics of new plantations that would have been established in primary forests (causing deforestation of 1.6 to 3 million ha in the reference scenario). Rehabilitated plantations on old sites (around 1.6 million ha) are not included in this emission mitigation potential.

iv) **Livestock:** potential reduction of around 20 Mt CO<sub>2e</sub>.

As part of the Letter of Intent scheduled for signature between the DRC and the Central Africa Forest Initiative (CAFI) for the period 2022-2031, the DRC undertakes not to allocate industrial agricultural concessions in high-value forests (the definition of which will be drawn up through a national participatory process) and peatlands, and to focus agricultural development primarily on the savannahs.

**C. Strand III: Impacts of urban growth and industrial sectors on forests:** a mitigation lever contributing 45 to 55 Mt CO<sub>2e</sub> to the total mitigation potential :

Reduction in demand for unsustainable fuelwood, mainly for consumption by the urban population: around 45 to 55 Mt CO<sub>2e</sub> (McKinsey et al., 2009). This objective will be supported by the DRC's commitment, set out in the Letter of Intent to be signed with CAFI for the period 2022-2031, to reduce the proportion of non-sustainable wood fuel 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, targeting urban and **peri-urban** households: the first is based on reducing demand by supplying around 5 million households with improved or efficient stoves (making it possible to reduce fuelwood consumption by around 50%). The second programme aims to promote the use of hydroelectricity instead of wood energy by covering part of the electricity bill for 5 million households, mainly in the southern provinces (Haut-Katanga, Tanganyika, Lualaba, Haut-Lomami, Lomami, Sankuru, Kasai, Kasai Central, Kasai-Oriental). The third programme involves afforesting marginal areas around towns to ensure the sustainable production and use of firewood through improved stoves.

**D. Transport:** two mitigation levers contributing between 27 and 37 Mt CO<sub>2e</sub> (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 CO<sub>2e</sub> (McKinsey et al., 2009) to the total mitigation potential. Four major actions are envisaged as part of the strategy, targeting urban and **peri-urban** households: the first is based on strengthening the institutional and legal framework for waste management; the second will focus on a rational waste management programme; the third action will consist of a waste-to-energy programme based on promoting energy-efficient cooking using biodegradable household waste and recovering biogas from landfill sites; the fourth will be aimed at developing aerobic composting systems on a commercial scale; and the last will involve producing energy and organic fertiliser from solid waste, wastewater and sludge.

## **F. Nature-based solutions :**

In response to the concerns of the UNFCCC, the DRC has already been developing nature-based solutions<sup>23</sup> for decades. As an active player in environmental processes and in contributing to global climate mitigation, the DRC has made commitments under various conventions. As a result :

- a. Under the Convention on Biological Diversity, the DRC has already set aside 13% of its national territory for the creation of national parks, i.e. 30,483,180 hectares;
- b. Considerable progress has been made, with the DRC's commitment to restore 8 million ha of degraded land under the Bonn Challenge. There is also the "1 Billion Trees" project, involving young people, especially schoolchildren;
- c. Under the terms of the Bali Conference of the Parties, which focused on reducing greenhouse gas emissions and strengthening forest carbon stocks, the DRC's REDD+ National Framework Strategy aims to stabilise forest cover at 63.5%. The country is therefore seeking to increase its forest cover by 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 public utility purposes conditional on the strict application of the legal framework in force<sup>24</sup> . The Government also undertakes to achieve, by 2030, the objective of at least 30% of national areas under protected status, in various forms as recognised by the law (protected areas and their buffer zones, conservation concessions, zones dedicated by local communities to the preservation of forests in simple land use plans defined in a participatory manner, conservation series in forest concessions, restriction zones in management plans, etc.), in accordance with the recommendations of the World Bank.), in line with the recommendations of the 30x30 initiative of the Coalition pour une Grande Ambition<sup>25</sup> , of which the DRC is a member.

The various landscapes of high conservation value that abound in the DRC are further proof of the ecosystem services rendered by the DRC's forests to humanity as a whole. In addition to all these contributions, peatlands are an important nature-based solution, enhancing the country's climate ambitions and contributions to policies, commitments and conventions. To this end, the mitigation measures planned for the Forestry and Other Land Use sector in this document include the restoration of wetlands, particularly peatlands used for agriculture and livestock farming, as well as the mapping and assessment of peatlands.

If the in-depth studies confirm the extent of the peatlands in the Democratic Republic of Congo, their contribution in terms of nature-based contribution will have to enhance the ambition of the

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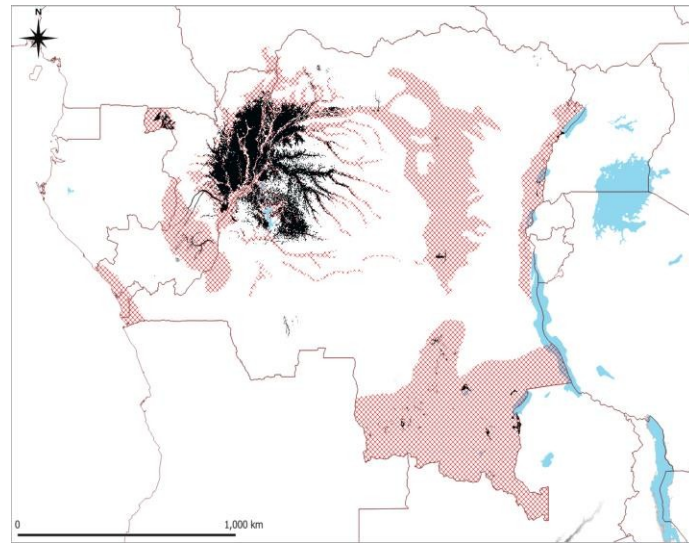
<sup>23</sup> According to the IUCN (2016), nature-based solutions are "actions to protect, sustainably manage and restore natural or modified ecosystems to directly address societal challenges in an effective and adaptive manner while ensuring human well-being and biodiversity benefits".

<sup>24</sup> Insert reference to the 2014 Act

<sup>25</sup> High Ambition Coalition - 30x30 Initiative: <https://www.hacfornatureandpeople.org/coalition-de-la-haute-ambition-pour-la-nature-and-people-en#fact>.



national contribution. The preliminary estimates<sup>26</sup> carried out by the Greifswald Mire Centre (figure 4) show that, apart from the peat bogs in the central basin shown on the map below, the Democratic Republic of Congo has other forms of peatland that have not yet been assessed. These include the peatlands of the Western Lowland Forest, the Atlantic Coast, the Albertine Rift Valley and the Katanga Plateau.



*Figure 11: Extent of peatlands in the DRC*

Given the importance of the links between peatlands and the various mechanisms, such as the REDD+ strategy and the reforms underway, particularly land-use planning and land reform, the DRC plans to :

- i. Clearly define the principles of legal protection and protocols for overlapping land uses in peatland areas in the National Peatland Strategy and/or include them in the current land-use planning reform;
- ii. Adopt clear provisions to protect peatlands in the planned revision of the Forestry Code, capitalising on the DRC's Sustainable Forest Management Programme (SFMP) and new REDD+ investment plan for 2021-2030, as part of the National REDD+ Framework Strategy, supported by CAFI, with the aim 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 Peatland 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 building national capacity and expertise, both institutional and technical, in the sustainable management of peatlands;

<sup>26</sup> The map below is an estimate made by Greifswald Mire Centre. The Democratic Republic of Congo will initiate work to harmonise the various maps with the data from the baseline study and the map produced by CongoPeat.

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

In addition to peatland restoration measures, the mitigation measures planned for the forestry sector in this document are based on other nature-based solutions. These include

- Promoting 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;
- Enhancing the MEOR (Methodology for Evaluation of Restoration Opportunities) tools at national level by integrating the use of traditional knowledge in the conservation of biodiversity around protected areas; and
- Support for initiatives to set up the forest and landscape restoration platform.

In implementing these measures, the DRC will be guided by the Global Standard for Nature-based Solutions<sup>27</sup>.

Figure 4 below illustrates the emissions projections for the BAU reference scenario for emissions from the AFAT sector, fully correlated with the national emissions balance. The graph shows that emissions more than doubled between 2010 and 2014, reaching 830.53 MtCO<sub>2</sub>. Between 2014 and 2018, there was a clear trend towards a reduction in emissions, of around 36%, which can be attributed to major investments and structural changes (measures and regulations) in management in the sector targeting the drivers of deforestation and aimed at curbing the deforestation curve. 2015 saw the start of the REDD+ implementation phase, commonly known as phase 2 of REDD+.

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<sup>27</sup> [2020-020-En.pdf \(iucn.org\)](#)

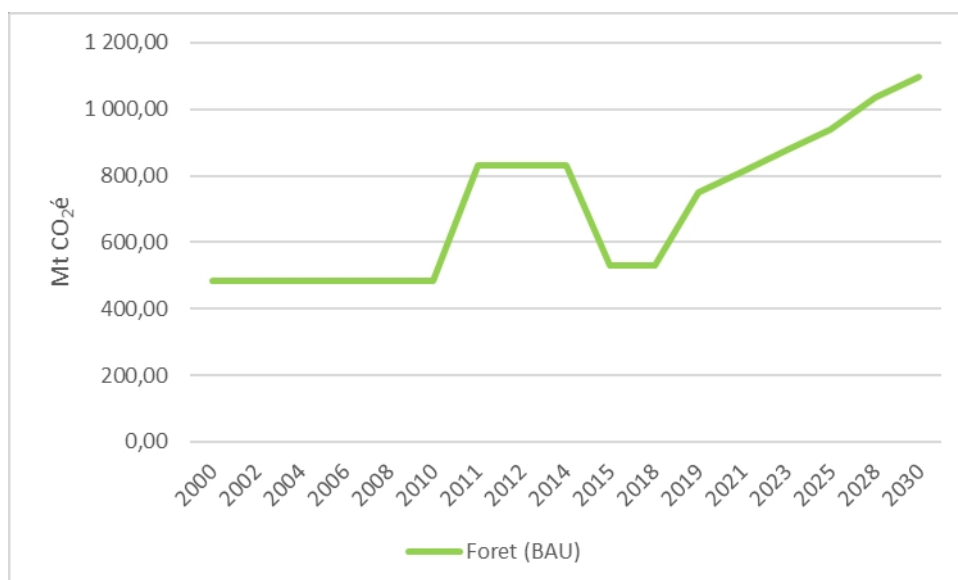


Figure 12: Projected emissions from the Forestry and Other Land Use (BAU) sector

The estimate of GHG reductions in the AFAT sector, targeted at 28% (Figure 12), is based on the 27 integrated mitigation measures by 2030 (Table 4).

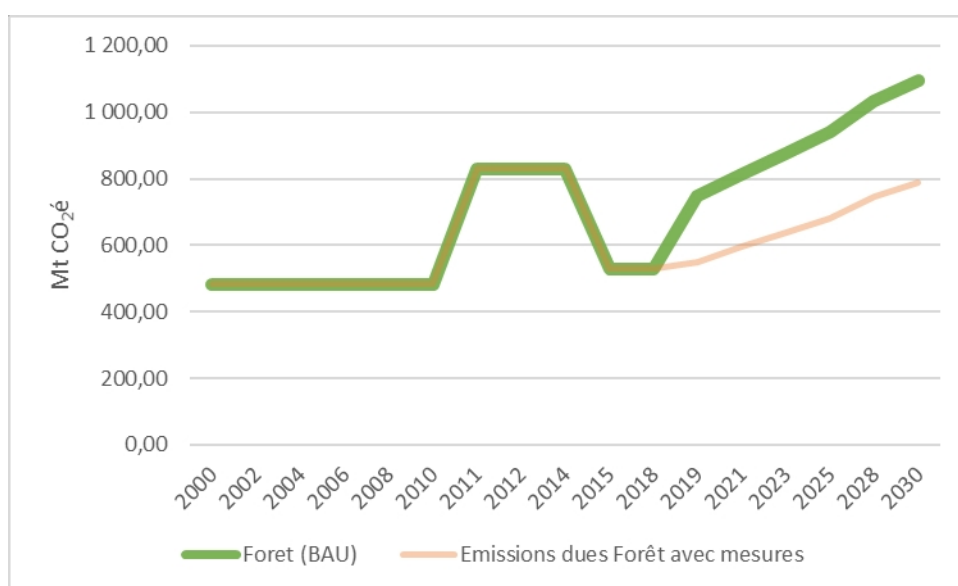


Figure 13: GHG reductions in the AFAT sector

Figures 9 and 10 show the evolution of projected emissions from the Energy, Agriculture and Waste sectors over the same time horizon in the BAU and with measures scenarios.

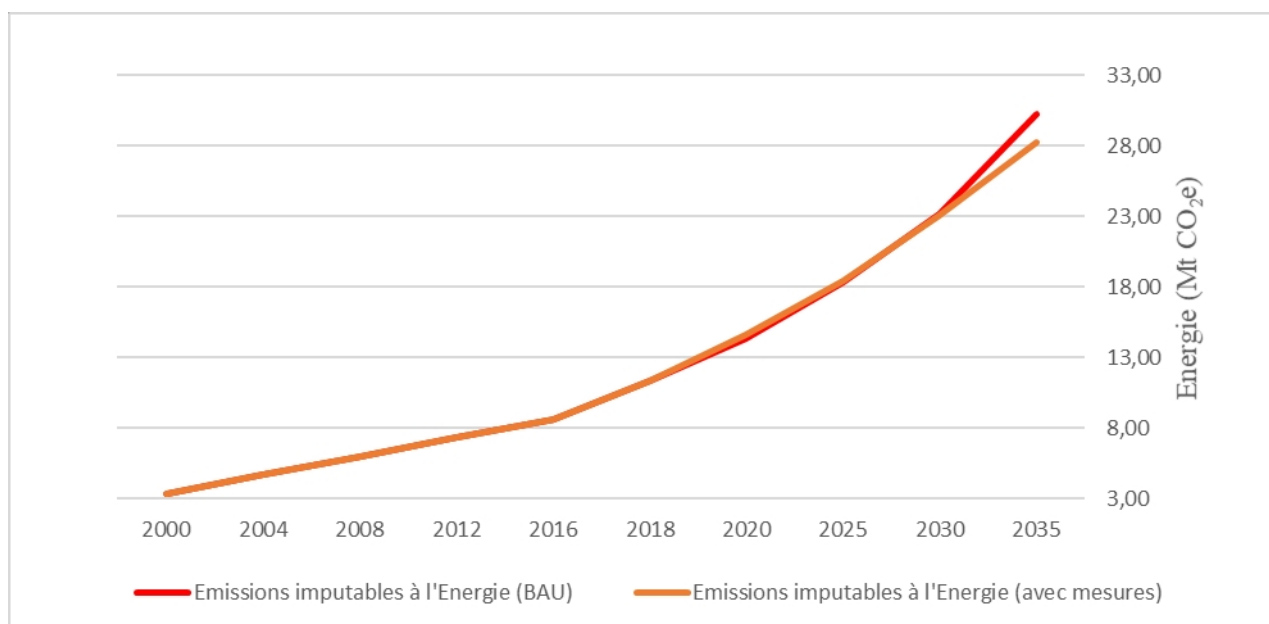


Figure 14: Emissions projections for the energy sector

The waste sector is characterised by an increase in emissions attributable to (i) the disposal of solid waste (90.4%) of all kinds generated by households, communities and businesses (commerce, industry, construction, agricultural residues, etc.), (ii) the discharge of domestic wastewater (6.8%), and open-air combustion. On average, these emissions account for around 11% of total national emissions.

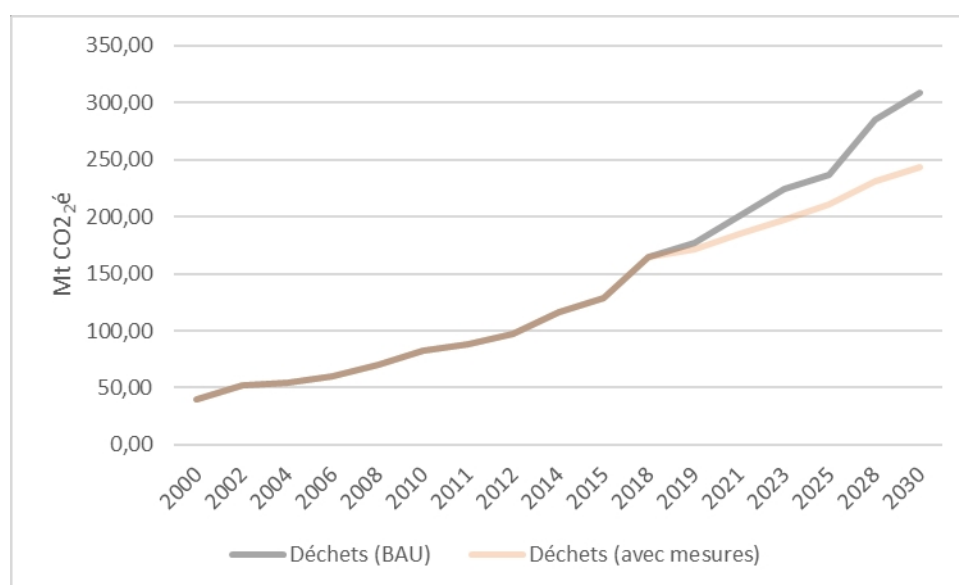



Figure 15: Trends in projected emissions from the waste sector

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

Table 4 summarises the measures that the DRC intends to implement to achieve the 2030 reduction target.


Table 4: Summary of GHG mitigation options and associated cost estimates.

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>28</sup>	Implementation period	Alignment with the SDGs
Energy	Reducing demand for wood energy and facilitating access to electricity	Rural electrification, and urban electrification using renewable energy sources	Hydropower from 3GW in 2020 to 4GW in 2030 For wind, solar and geothermal energy by 2.9 MW in 2020 to 42.7 MW in 2030 8 to 10 units installed	74,2 à 94.6 Mt CO <sub>2</sub> e		1,95		
		Promoting improved stoves & improving the carbonisation	Increase from 12 -15% to 25 -30% reduction in yield 3 million households have FA29			1,05		
		Promoting renewable energies	Renewable Energy Act 2014 amended Number of homes, institutions and manufacturing industries equipped with solar systems photovoltaic			0,28		

<sup>28</sup> Estimated cost per tonne of CO2 equivalent of around USD 100 to 130

<sup>29</sup> Improved fireplaces

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup> <sub>8</sub>	Implementation period	Alignment with the SDGs
		Transition to energy-efficient cooking	Number of households using biogas technologies, LPG and briquettes made from agricultural residues or household waste biodegradable			0,63		
		Industrial plantations - Wood energy	130,000 ha of energy plantations			0,18		
	Developing and improving urban and interurban transport	Promotion of transport infrastructure	<p>10 urban centres (towns and cities) with: traffic master plan ;</p> <p>) New public transport system (Bus, Rail, etc.) ;</p> <p>i) Number of road, rail (interconnection), river and lake infrastructures built/rehabilitated ;</p> <p>) Number of assembly units for new low-emission vehicles locally (in terms of transfer of</p>			1,1		

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup> <sub>8</sub>	Implementation period	Alignment with the SDGs
			technologies)					
Agriculture	Sedentary farming	Promotion of technical itineraries aimed at the sedentarisation of farmers, particularly in forested areas, including wetlands	1 million ha of irrigated areas developed and equipped Around 150 farmers' organisations and farmers' cooperatives established ; i) Number of farmers using the guide to good agricultural practice for the management of fallow land and the use of natural fertilisers; ii) Number of awareness-raising and agricultural extension campaigns per year	180 à 187 Mt CO <sub>2</sub> e (43%)		1,7		










		Integration agriculture into the national land use development plan d in the implementation of the	Existence of: policy regional planning ; a national regional development plan			0,2		
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup> <sub>8</sub>	Implementation period	Alignment with the SDGs
		REDD+ strategy						
		Promoting intensive agriculture in areas to limit the pressure on the savannahs. natural forests	1.6 million ha of intensively farmed land developed Number of farm households using livestock waste and by-products in the form of biogas and natural fertilisers			1,33		
		Promoting rational and sustainable farm areas for agricultural production for preserve agro-ecological conditions to ensure the stability of forest cover				1,2		

		Intensification of food crop production (carbohydrates, oilseeds, legumes) in the zone and in			1,3		
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup> <sub>8</sub>	Implementation period	Alignment with the SDGs
		degraded forest						
		Intensification of agricultural cash production in forest and savannah, but with of sustainable agroforestry systems (cocoa, coffee, banana, special crops) that enable to make the most of the comparative advantages farming for these crops	Number of new plantations of perennial crops and agroforestry in shrub savannahs or savannah-forest mosaics			1,3		
		Publicising and raising awareness of best practice	Number of campaigns to raise awareness and disseminate information on good practice per year			0,8		

		Development of intensive livestock farming	Number of farms and agroforestry systems,			1,2		
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup>	Implementation period	Alignment with the SDGs
Forestry and other land use	Reduce deforestation and forest degradation	Promotion of traditional and modern afforestation and modern reforestation techniques to preserve the environment. forests	760,000 ha of forest restored 15% of 7 million ha of marginal areas reforested	182 à 192 Mt CO <sub>2</sub> e (or 28%)		1,45		  
		Support for the development of community forestry as a tool for conserving biodiversity and combating the loss of forest cover at rural environment	Number of awareness and information campaigns on reduced impact logging (RILF)			1,5		   
		Restoration of wetlands, in particular peat bogs used for agriculture and breeding	Area of wetlands protected and/or restored			1,3		

		Development of tools MEOR (Méthodologie pour l'Évaluation des Opportunities for	Number of training training, awareness-raising and outreach		0,85		
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup> <sub>8</sub>	Implementation period	Alignment with the SDGs
		<p>Catering)</p> <p>o</p> <p>n a national scale, including</p> <p>making the most of traditional knowledge in</p> <p>th</p> <p>e conservation of biodiversity around areas protected</p>						
		<p>Support for initiatives to setting up the platform on</p> <p>th</p> <p>e forest restoration and at landscapes</p>	<p>Texts setting up the forest restoration platform</p>			1,2		









		Strengthening th e forest governance, including the fight agains t the illegal exploitation of timber and other forest resources at	Existence of fraud monitoring and enforcement systems		1,2		
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup> <sub>8</sub>	Implementation period	Alignment with the SDGs
		taking into account of studies, analyses and tools produced in the implementation of the various relevant forestry processes such as the VPAS - FLEGT						
	Reinforcing the carbon stock	Sustainable management of timber harvesting				1,8		  
		Sustainable management and rehabilitation of mining and oil operations	Area of former mining and oil operations rehabilitated/restored in accordance with the Management Plan management plan Environmental			0,09		

			Management Plan (EMP)				
		Combating bush fires	Protected area ; Existence of monitoring and control systems bushfire management plan		0,11		<div> <div>3 BONNE SANTÉ ET BIEN-ÊTRE</div> <div>13 LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES</div> <div>15 VIE TERRESTRE</div> </div>

Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup> <sub>8</sub>	Implementation period	Alignment with the SDGs
		Mapping and assessment of peatlands	Existence of a map showing the location of peat bog areas			0,52		 
Waste	Improving access to waste management services	Reinforcement from frame institutional and legal for the management of waste	Existence of texts legislation governing waste management	37 Mt CO <sub>2</sub> e		0,14		   
		Programme for the rational management of waste				0,44		    
	Recovering waste	energy recovery from waste (reduction emissions emissions) CH <sub>4</sub> emissions from landfill sites)	Number of kWh produced from landfill gas recovery Number of households with access to this technology			0,07		   

		Use of from m discharges			0,29		
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Sector	Objective	Actions	Indicators	Reduction potential in 2030	Adaptation co-benefits	Estimated cost (USD billions) <sup>2</sup> <sub>8</sub>	Implementation period	Alignment with the SDGs
		Aerobic composting	Number of digesters available ; Number of energy recovery and non-landfill gas plants in different urban areas.			0,21		  
		Energy production and organic fertilizer from solid waste, wastewater and sludge fecal				0,21		  
Total						25,6		

## 6.1. Analysis of vulnerability to the impacts of climate change in the DRC

The Democratic Republic of Congo (DRC) is vulnerable to the various effects of climate change and lacks the capacity to deal with them. Indeed, the ND-GAIN index ranks the DRC 5<sup>e</sup> worldwide among the countries most vulnerable to climate change in terms of their capacity to adapt<sup>30</sup>. The impacts of climate change are already being felt across the country, with persistent hot weather, heavy rains, land degradation, particularly through erosion, longer dry seasons, more frequent droughts during the rainy seasons, and flooding<sup>31</sup>.

Climate projections for the DRC over the coming decades predict an increase in temperatures of between 3°C and 5°C, a decrease in rainfall and an increase in its variability, as well as an increase in extreme events<sup>32</sup>. These climate 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 water resources, forestry, agriculture and the coastal zone as the sectors most vulnerable to the effects of climate change.

### 6.1.1. Impacts, risks and vulnerabilities to climate change

#### 6.1.1.1. Precipitation and temperature projections and trends to 2100

Studies to assess vulnerability and climate risks in the DRC, carried out as part of the implementation of the NAPA (2006), taking into account both popular perception in general and scientific considerations, have identified five major climate risks:

1. intense rainfall ;
2. coastal erosion ;
3. riparian flooding ;
4. heatwaves; and
5. seasonal droughts.

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

<sup>31</sup> Second national communication, 2009.

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

#### 6.1.1.2. Precipitation and temperature trends to 2100

Following the application of MAGICC-ScenGen projections on rainfall trends (rainy season) and mean annual maximum temperature, the four climate zones were defined as shown in Table 4 (PANA, 2006).

Table 5: Climate zones

Zone	City/benchmark	Longitude East	Latitude Sud	Years	Rainfall (mm)	Temperature
I	Matadi	12-15°	5°-7° FROM	2005	1100	25,2
				2100	850	29,1
II	Kinshasa	12,5°	2.5°-5° C	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 trends indicate a gradual increase. Rainfall, on the other hand, is set to experience two different situations: an increase, especially in the Cuvette, and a drop in rainfall elsewhere as the rainy season shortens the further south you go. Katanga in particular is likely to experience less than 5 months of rainy season by 2020, compared with 7 at present.

#### 6.1.1.3. Exposure and potential impact indicators

Table 5 provides details of 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 human life	Duration (days)	Extent (km ) <sup>2</sup>	Frequency (%)	Trend
Rain Intense	5	2	3	4	3	↑
Seasonal drought	2	1	2	4	3	↑
Flooding Local residents	3	2	2	2	2	↑
Crisis Heatwave	3	2	2	4	3	↑
Coastal erosion	5	1	2	2	2	↑

Source: 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 a year)

**Spatial extent:** 2 = 10Km<sup>2</sup> , 3 = 100 Km<sup>2</sup> , 4 = 1,000 Km<sup>2</sup>

**Frequency:** 1 = 1% probability (certain 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, based on the MAGICC-SCenGen model, confirms the trends expressed in PANA. This assessment of climate change at the scale of the Congo Basin<sup>333</sup> , based on an ultra-modern multi-model and multi-scenario ensemble used for global and regional climate change forecasts, indicates a robust increase in mean temperature throughout the Congo Basin, irrespective of the baseline emission scenario. In addition to average temperatures, major variations in temperature extremes are also projected. In terms of total annual rainfall, the ensemble studied shows no major change in the project area, again irrespective of the baseline emissions scenario. However, variations in precipitation characteristics are to be expected. The forecast variations, in terms of the intensity of heavy precipitation, indicate a sharp increase over most of the area. Similarly, an upsurge in episodes of

<sup>3333</sup> 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.

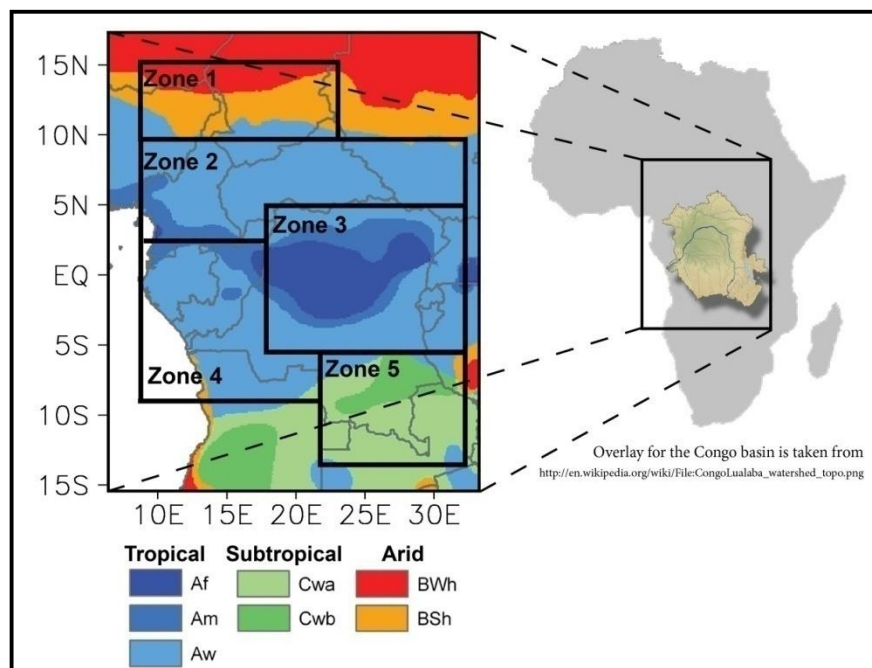
drought in the rainy season is highly likely. All these changes could have a considerable impact on the region's agricultural and hydro-energy systems, even if the average annual availability of water resources remains constant.

Thus the climatic characteristics in this particular area, subdivided into five climatic zones (Table 6), three of which cover the DRC (Figure 7), show many variations. For example, the rainy season 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 centre. In addition, climatic changes are predominant in the main, with wetter conditions in the centre of the domain than in the bordering regions to the north and south.

Table 7: Details of the five sub-zones

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 colours in the map highlight the different climates found in this region, ranging from tropical types in the centre 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 for the 2046-2065 horizon using the PITMAN hydrological model for the Bukama reference station, show an increase of around 10 to 15% compared with the historical reference period. Furthermore, analysis of future rainfall trends at different time intervals (interannual and decadal) shows that there is a slight difference between the annual averages at 2046-2065 and 2081-2100, which would reflect the variability trends of the historical reference period. However, there is a significant disturbance in the seasonal distribution of rainfall over the 2046-2065 and 2081-2100 horizons. This change in the distribution of rainfall characteristics associated with rising temperatures will lead to an increase in extreme hydrological phenomena, such as floods and droughts, gullying soil erosion and landslides, and disruption of the services provided by aquatic ecosystems, i.e. domestic water supply, hydroelectricity, irrigation, navigation, etc.

As for sea level rise scenarios, in his analysis of the time series of sea level height in the coastal zone from January 1993 to December 2012, Longandjo<sup>34</sup> shows a trend towards sea level rise of around 2.2 mm per year, i.e. a rise of around 4.00 cm over two decades.

## 6.2. Adaptation and resilience priorities

The DRC drew up a National Adaptation Programme of Action (NAPA) in 2006. This programme assesses the risks and vulnerability to the impacts of climate change at national level and identifies urgent and immediate adaptation activities that respond to the current and anticipated harmful effects of climate change, including extreme events. The main sectors identified are water resources, forestry, agriculture and the coastal zone. The process of identifying areas for urgent and immediate action has resulted in the selection of the following ten priority adaptation options:

- electrification of urban and rural areas ;
- catchment and drilling of water wells ;
- development of water reservoirs ;
- erosion and flood control ;
- rational management of forest resources ;
- protecting coastal areas ;
- the construction and rehabilitation of communication routes (roads, railways and waterways)
- settling in rural areas ;
- strengthening agricultural production capacity; and

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<sup>34</sup> Quoted by Fils, *Stratégie nationale et Plan d'action 2017-2023 de Réduction des risques naturels et de catastrophes en RD. Congo*

- strengthening the capacity of national meteorological services.

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

Whereas the NAPA aimed to identify urgent priority actions for 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 small-scale farming
- (iv) Disaster risk reduction and protection of coastal areas
- (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 supplies and livelihoods. Conservation measures should be put in place in specific sites where ecosystems are at risk of degradation. A number of actions could be taken, including

- More effective inventory and monitoring of forests, taking account of 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 implemented in specific sites where ecosystems are at risk of degradation;
- Involvement of local communities and indigenous peoples in negotiating social clauses with logging and mining companies;
- Raising awareness of violence and the human rights of men and women among the various players involved in logging;
- Initiation of pilot projects on non-timber forest products (NTFPs) with local communities and indigenous peoples;
- Reforestation and domestication of species of great 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:

- Land-use zoning to define the areas to be used specifically for agricultural activities;
- Promoting sustainable good farming practices, distributing improved and resilient seeds to farmers and popularising soil enrichment techniques;
- Support for the organisation of marketing channels and a policy of remunerative prices for the sale of agricultural products to producers;
- Supervision and support for farmers in their agricultural activities;
- Strengthening agricultural extension ;
- Promoting agricultural research ;
- Development of tools and procedures for managing agricultural climate crisis situations;
- More weather observation stations ;
- Involvement of the State, under the heading of national solidarity, in the event of exceptional climatic accidents, to ensure compensation for risks ;
- Subsidies for small-scale farmers, who are increasingly vulnerable, to help them adopt new agro-ecological practices to ensure the long-term future of their farms;
- Selection of resilient varieties by agricultural research centres and universities;
- Promoting sustainable agricultural sectors ;
- Building strategic reserves of food products; developing and disseminating research products;
- Structuring farmers' organisations and improving agricultural governance ;
- Gender mainstreaming ;
- Strengthening human and institutional capacities ;
- Capacity-building for farmers' organisations.
- More weather observation stations ;
- Establishment of a dynamic agricultural calendar for each crop with the involvement of agro-meteorologists and agronomists.
- Strengthening individual and collective prevention efforts in agronomic and technological research, ensuring the consistency of public support for prevention investments, and developing tools and procedures for managing agricultural climate crisis situations;
- The development of capacity to mutualise risks, over time and space, with a large possible number of PA and other farms joining the mutual ;

### 6.2.3. Climate risk management in small-scale farming

- Implementing early warning solutions by: (i) improving people's access to multi-hazard early warning systems and to information and assessments relating to disaster risks; (ii) establishing partnerships around meteorological services relating to the early warning needs of rural women and to drought; (iii) identifying solutions for preventing agricultural landslides; and (iv) drawing up intervention plans for implementing the early warning system for women in subsistence farming.
- Setting up response solutions through hydro-agricultural development and mapping out programmes for implementing agricultural water management technologies;
- Capacity-building for gender-sensitive extension workers at rural radio stations to provide warnings of climatic hazards;
- Using agro-meteorology to prevent climatic risks.
- Subsidies for small-scale farmers, who are increasingly vulnerable, to help them adopt new agro-ecological practices that will make their farms more sustainable.

### 6.2.4. Disaster risk reduction and protection of coastal areas

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

### 6.2.5. Managing water resources and environmental sanitation

- Additional dredging or widening to allow excess water to flow freely.
- Adoption of river stabilisation techniques in high-risk areas
- Improving the prevention of extreme weather events and floods (for example) through early warning systems and strengthening the resilience of water resources through innovations and changes to the way we use water.

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

- Improving access to safe water, sanitation and hygiene in rural and peri-urban areas;
- Support for the Ecole et Village Assainis (EVA) programme, established nationwide by developing a strategy centred on the community and its needs, giving 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. Implementation plan for adaptation measures














Table 7 summarises the actions that the DRC intends to take to achieve its priority objectives for adapting to the impacts of climate change by 2030. The main sectors identified are water resources, forestry, agriculture and the coastal zone.


















Table 8: Summary of adaptation measures and their estimated costs



















Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated cost (Billions USD)	Implementation period	Alignment with the SDGs
Forest	Manage sustainably forest ecosystems and biodiversity	Developing projects to exploit forest resources (NTFPs, community forestry, etc.) with local communities and indigenous peoples, while ensuring that legal provisions are applied.	Number of projects implemented	-Job creation -Protecting ecosystems	1,15	2021-2026	
		Reforestation of degraded areas with species of great ecological, economic and cultural value to communities	Area reforested	Restoring degraded ecosystems	1,61	2021-2026	
		Development of plantations agroforestry in degraded areas	Surface area areas occupied by agroforestry plantations	Catering degraded land	0,58	2021-2026	
		Support for sustainable fishing and fish farming micro-projects	Number of microprojects implemented	-Job creation - Improving safety	0,23	2021-2030	

















Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated cost (Billions USD)	Implementation period	Alignment with the SDGs
				food and nutrition			
		Promoting projects that enable people to switch to economic activities that have a reduced impact on forest ecosystems	Number of projects implemented	-Job creation -Protecting ecosystems	0,06	2021-2030	
		Involvement of local populations in the management of forest ecosystems in their area	Number of persons involved	- Protection ecosystems	0,06	2021-2030	
		Developing the traditional knowledge of local populations linked to the conservation of ecosystems	Type of knowledge capitalised	-Protecting ecosystems	0,06	2021-2030	
		Coordination strategic programmes, plans and initiatives to adapt to climate change	Existence of a coordination structure	-Enhanced governance	0,06	2021-2030	
		Promoting sustainable land management (SLM)	8 million hectares to be restored and managed sustainably	Restoring 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	Integrating climate change concerns into sector planning and budgeting at all levels (national, provincial and local)	Number of development plans incorporating adaptation to climate change	Optimising the use of natural resources and regulating carbon and nitrogen cycles through agricultural production sustainable	1,27	2021-2030	  
		Production and dissemination of seeds resilient to the effects of climate change	-Number of seeds resilient to the effects of climate change adopted	-Innovation and agricultural productivity	0,92	2021-2030	   
		Development of the zoning programme with a view to defining the areas to be specifically allocated to agricultural activities	Surface area of zones to be allocated specifically to activities agricultural	Optimising the use of natural resources	0,58	2021-2030	  
		Collection and processing of climatic data by INERA and METTELSAT and regular distribution of meteorological bulletins and seasonal forecasts	Number of meteorological bulletins and seasonal forecasts published	- Innovation and productivity - Greater knowledge of the climate	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' organisations and agricultural governance	Percentage of target population by gender, age and province	Strengthened agricultural governance	0,29	2021-2026	  
		Support for the organisation of marketing channels and a policy of remunerative prices for the sale of agricultural products to farmers	Percentage of target population	Strengthened agricultural governance	0,17	2021-2026	  
		Creation and rehabilitation of agricultural services	Number of kilometres of service roads created and rehabilitated	Distribution and efficient use of resources	0,69	2021-2030	   
		Promoting (i) cultivation practices that enable farming activities to be settled, (ii) improved and/or resilient seeds, and (iii) soil and water management techniques in agriculture that are accessible to farmers.	-Number of cultivation practices -Number of improved seeds 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	Strengthened agricultural governance	0,17	2021-2030	  
		Reinforcement the capabilities and empowerment of women	Number of women who benefited from capacity building	Capabilities human and institutional resources	0,23	2021-2030	    
		Developing alternative energies wood energy to protect the forest (solar, gas, or at least improved stoves, etc.)	Number of types of alternative energy wood energy developed	Protection of ecosystems	0,17	2021-2030	  
		Building capacity to adapt to and manage the impact 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 for 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
		Creation of agricultural business clusters (PEA) and promotion of agri-business	Number of companies created	Job creation	0,46	2021-2030	   
	Ensure the climate risk management in small-scale farming	Setting up early warning systems	Number of intervention plans for the implementation of the early warning system for women in subsistence farming developed	Innovation and productivity	0,58	2021-2030	  
		Setting up response measures in the event of natural disasters	-Number of hydro-agricultural developments carried out - Number of water and land conservation programmes (fight against climate change) 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 agri-environmental practices to ensure the long-term viability of their farms.	Number of small-scale farmers benefiting from subsidies	Job creation Efficient distribution and use of resources	0,23	2021-2030	
Coastal zone	Reducing disaster risk and protect coastal areas	Assessment of vulnerabilities and human and institutional capacity needs	Number of studies carried out on vulnerabilities and human and institutional capacity needs	Strengthened human and institutional capacities	0,58	2021-2026	
		Strengthening the early warning system for vulnerable coastal areas and areas at risk from hydro-climatic hazards (flooding, drought, soil erosion (urban and agricultural), landslides, volcanic eruptions, etc.).	Number of early warning systems for vulnerable coastal areas and hydro-climatic risk zones installed	Innovation and productivity	0,29	2021-2030	
		Implementation of measures to combat coastal erosion in vulnerable coastal areas, in particular the area between Banana and Nsiamfumu (26 km)	Number of measures to combat coastal erosion in	Preserving 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 areas using appropriate erosion control techniques	Surface area of erosive zones protected by the use of erosion control techniques adapted	Preserving natural areas	0,16	2021-2030	  
		Support to activities household income-generating activities	Number of people/men receiving support for IGAs	-Job creation -Protecting ecosystems	0,75	2021-2030	  
		Education, information and awareness-raising on disasters and climate risks.	Number of communication plans implemented	Optimising the use of natural resources	0,23	2021-2030	   
<b>Water resources</b>	Manage water resources sustainably and clean up the	Drawing up the strategy and the law on sanitation	Number of laws drafted on sanitation	Enhanced climate governance	0,01	2021-2026	  










Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated cost (Billions USD)	Implementation period	Alignment with the SDGs
	environment	Elaboration of water resources development and management plans at basin or sub-basin level	Number of water development and management plans per basin or sub-basin basin	Enhanced climate governance	0,35	2021-2026	
		Creation/rehabilitation of water supply structures in villages	Number of water supply structures installed	Enhanced climate governance	0,92	2021-2030	
		Promoting river stabilisation techniques in high-risk areas	Number of high-risk areas on the river stabilised	Innovation	0,46	2021-2030	
		Strengthening the resilience of vulnerable populations (women and children) through support for the Clean Schools and Villages programme	Number of Healthy Schools and Villages programmes implemented	Improved food and nutrition security	0,35	2021-2030	
		Promoting pro-poor approaches to the provision of sanitation infrastructure and services	Number of sanitation infrastructures and services	Protecting ecosystems	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 hydraulic/agro-hydraulic developments	Number of communication plans implemented	Enhanced climate governance	0,06	2021-2030	
		Improving access to drinking water	Number of households with access to drinking water (rural, urban and rural areas) urban)	Home improvement	0,23	2021-2030	
		Improving access to sustainable waste management and wastewater treatment services	Number of households with access to sanitation services nt	Home improvement	0,20	2021-2030	
		Improving access to communications (roads and ICTs) and opening up vulnerable rural areas	Number of households with access to information	Improved quality of life	0,32	2021-2030	
Health	Facilitate access to services from	Construction/refurbishment and equipping health care facilities	Number of healthcare facilities built, rehabilitated or	Improvement health	0,92	2021-2030	

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Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated cost (Billions USD)	Implementation period	Alignment with the SDGs
	quality of life		equipped				 
		Strengthening human and financial institutions 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 people and institutions trained	Strengthened human and institutional capacities	0,23	2021-2030	 
		Integrating the potential impact of the impact of climate change on public health in EU policies and plans. development	Number of plans or programmes	Governance enhanced climate	0,06	2021-2030	 
		Developing synergies with other public health initiatives	Types of synergy created Number and quality of committed players	Strengthened climate governance	0,06	2021-2030	 
Energy	Facilitating access to clean, affordable energy for households	Promotion of alternative energy production (installation of solar, wind and biomass systems),	Number of households with access to alternative energy	Protecting ecosystems	0,40	2021-2030	  

Sector	Objective	Actions	Indicators	Mitigation co-benefits	Estimated cost (Billions USD)	Implementation period	Alignment with the SDGs
	affordable	Improving local climate modelling techniques to better predict future impacts	Climate scenario identified	Protecting ecosystems	0,23	2021-2030	  
		Development of water retention basins, construction of dykes to protect production infrastructure	Number of catchment areas developed	Protecting ecosystems	0,35	2021-2030	  
		Promoting rational use of electrical energy, improving management of the energy distribution network system	Number of households with access to electricity	Protecting ecosystems	0,17	2021-2030	  
		<b>TOTAL</b>			<b>23,08</b>		

## 7. Measurement, Notification and Verification (MNV) framework

### 7.1 Transparency framework

The new improved transparency framework requires the NDC's MNV system to report transparently on progress towards the goals set out in the DRC's NDC and to track progress in implementing mitigation and adaptation actions - as well as the use and results of means of implementation and support, including capacity building, technology transfer and financing. The VNR system also takes into account non-ESG impacts on the environmental, social and economic impacts of NDC actions that would lead to transformational change towards the achievement of national sustainable development goals. In the case of the DRC, this must take into account the integration of the gender and youth dimensions, which are at the heart of the country's National Strategic Development Plan (NSDP).

These national and international requirements for the three dimensions of VNM overlap and it is useful to demonstrate their links within the national VNM system. For example, funding, capacity building and technical support have a direct impact on the implementation of mitigation and adaptation actions. Therefore, the DRC NDC's national MNV system will be useful for monitoring and reporting on progress and use of support, as well as facilitating the identification of challenges to inform policy changes essential to improve implementation.

In the DRC, the mandate for coordinating and monitoring the harmonious implementation of environmental action in general, and climate action in particular, is entrusted to the Ministry of the Environment and Sustainable Development (MEDD). The MEDD, through the Direction de Développement Durable (DDD), is responsible for coordinating the whole dynamic of the implementation and monitoring of all issues relating to climate change. It is the focal point for the United Nations Framework Convention on Climate Change (UNFCCC). As such, the DDD is responsible for preparing and producing 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, Town and Country Planning, Scientific Research, Planning, the Budget, Public Health, Livestock, Hydrocarbons, the Economy, Mining, Hydraulics and Electricity, Gender, Universities) and other organisations, both nationally and internationally. The Ministry of the 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 the Environment and Sustainable Development, a National Committee on Climate Change has been set up. It brings together delegates from

various public administrations and institutions, universities, research centres, national organisations and civil society with a view to sharing 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 have been set up to carry out the various activities, studies and reports. The Technical Coordination Committee is intended to be a consultation body and a forum for dialogue, exchange and guidance between the stakeholders involved in implementing the NDC. It brings together delegates from the various public administrations, institutions and organisations with a view to sharing a common vision and understanding in the implementation of projects likely to ensure the progress 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 MEDD; (ii) To facilitate coordination with the relevant authorities at national, provincial and local levels; (iii) To define the orientations and guidelines of the NDC process and decide on the actions to be taken; (iv) To review the overall progress 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, and propose corrective measures; and (vi) Monitor and evaluate the implementation of the NDC process.

The DDD is responsible for all reporting and communication to the Technical Coordination Committee and the Government, through the MEDD, in order to inform policy and strategic decisions that ensure the NDC's VNG effectively supports the country's sustainable development in line with its National Strategic Development Plan (NSDP).

The following are key areas within the Committee's remit:

- To review and establish the committee's objectives, terms of reference, composition and general working arrangements, the main purpose of which is the approval and subsequent reporting of the NDC's VNM at national and global levels;
- Provide advice and feedback on scope, timing, costs and quality concerns, or guidance on programme priorities, that arise during the planning, design and implementation of NDC-related projects;
- Facilitate access to the resources needed to review and report on NDC VNMs and approve projects at key stages;
- Review and examine studies and research activities in line with the NDC to facilitate quality assurance and alignment with strategic priorities;

Figure 8 below summarises the institutional arrangements for monitoring the implementation of the NDCs, including the national NDC MNV process.

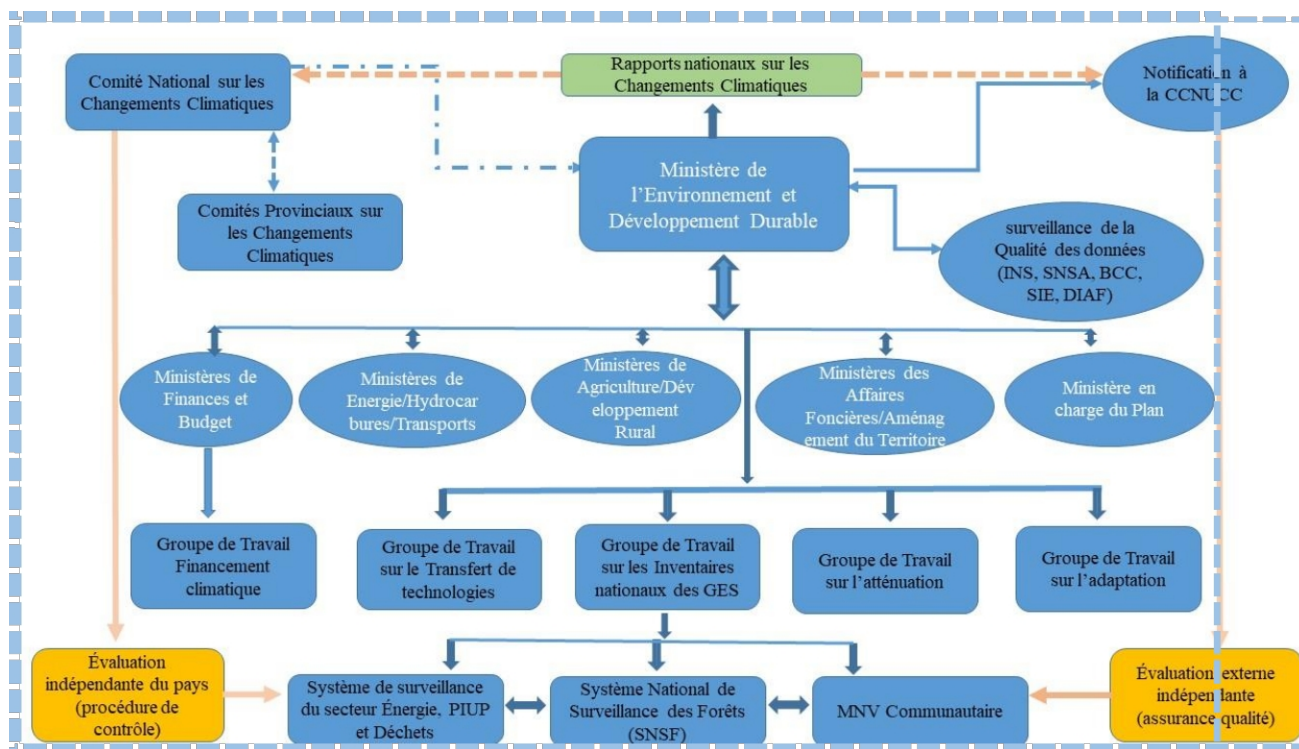


Figure 17: Institutional arrangements for monitoring NDC implementation

Table 12 below lists the 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 NDC implementation process.

In addition, during the preparatory phase of the implementation of the NDC, it will be possible to consider the participation of other specialised institutions such as the Institut National d'Etudes et Recherches Agronomiques (INERA), the Agence Nationale de Météorologie et Télédétection par Satellite (METTELSAT), the Service National de Statistiques Agricoles (SNSA), the Observatoire National de l'Aménagement du Territoire (ONAT), etc.

## 7.2 Data and information management for the CDN MNV

The results-based monitoring and evaluation system will be the main repository and therefore the appropriate platform for monitoring and managing information and data for the environment and natural resources sector, chaired by MEDD. In this way, all climate change data, including the NDC VNR managed and reported by the NDC VNR Technical Working Committee, will be processed and accessible through the results-based monitoring and evaluation system. The evaluation and

Defining the most appropriate data sources will be important for any MNV system to be effective.

The NDC VNR technical working committee to be established will play a key role in the production and reporting of national-level data and information and will be significantly involved in data collection, transparency and verification. The committee will ensure that the DRC's VNR system links mitigation, adaptation and financing, as well as support for capacity building and technology transfer as critical aspects of the implementation of the NDC.

Primary data will generally be collected at provincial level and sectors/institutions will have direct links with provincial levels to obtain data and information specific to the sector/priority action, including the CDN MNV.

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 input to the NDC's VNM 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 MEDD's Sustainable Development Directorate is the technical focal point for the collection, processing, entry and analysis of data related to the CDN's MNV.

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



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

Stakeholders	Responsibility/role	Role in implementing CDN
Ministry of the 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 drawing up national and international reports (national GHG inventories, national communications on climate change, Biennial Update Reports (BURs), NDCs, national climate change plans, etc.), as well as managing data relating to the forestry sector. It acts as Focal Point for the UNFCCC, the GEF and the CTF.</p> <p>Head of 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>	It will coordinate all activities relating to the preparation and implementation of project interventions, as well as those linked to monitoring, reporting and improving transparency.
Ministry of Agriculture (MINAGRI)	Responsible for the design, formulation, coordination, promotion, monitoring and evaluation of agricultural development policies. It is responsible for the management of all data relating to agriculture published in the NAHS directories (animal production and plant).	He will be responsible for coordinating tasks relating to the collection and improvement of data for the monitoring and reporting of agricultural activities.

Stakeholders	Responsibility/role	Role in implementing the CDN
Ministry of Rural Development (MINDER)	Responsible for achieving food security and improving the living conditions of rural populations in a sustainable and effective way.	It will coordinate activities and data management related to rural activities and, because of its representation across the country, it will provide operational and technical information for all aspects of the AFAT sector at various levels.
Ministry of Fisheries and Livestock	Responsible for the sustainable management of fish and animal resources and their contribution to the food and nutritional security of the population. It is responsible for managing all data relating to livestock farming and fishing.	He will be responsible for coordinating tasks relating to the collection and improvement of data for the monitoring and reporting of fishing and livestock activities.
Ministry of Regional Planning	Responsible for rational land use planning (zoning)	<ul style="list-style-type: none"> <li>- Assess the territory's potential in terms of renewable and non-renewable natural resources in the national soil and subsoil</li> <li>- Permanent control and monitoring of the use of the country's physical space</li> <li>- Share the data from the National TA Observation with the INS so that it can be capitalised on for monitoring and evaluation purposes.</li> </ul> <p>evaluation of the implementation of the CDN</p>
Ministry of Land Affairs	Responsible for managing the general property, land and real estate regime	<ul style="list-style-type: none"> <li>- Make access and secure the land for local communities and indigenous peoples</li> <li>- Securing land tenure to promote better management rational and sustainable use of natural resources</li> </ul>
Ministry in charge of Planning (Ministère du Plan)	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 implementing the CDN
Ministry of Health	Implementing the Government's health policy	<ul style="list-style-type: none"> <li>- To help reduce the environmental pressures that could lead to migration and its effects on health and well-being.</li> <li>- Mobilising the health sectors to address major environmental risks, including climate change, air pollution, water and sanitation, food safety, waste and exposure to hazardous and toxic chemicals.</li> <li>- Stimulate and increase the exchange of best practice, experience and technical expertise with a view to strengthening health, improving monitoring of health and environmental protection</li> </ul>
Ministries responsible for foreign affairs and international cooperation	Search for, negotiate and mobilise external resources for national development.	Organise meetings of bilateral and multilateral partners and set up a permanent consultation framework at national level.
Ministries responsible for the interior and social affairs	Managing natural disasters and calamities	Coordinate the interdepartmental committee 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"> <li>- Directing scientific and technological research towards supporting efforts to combat climate change</li> <li>- Publishing and disseminating research results science and technology in the fight against climate change</li> </ul>

Stakeholders	Responsibility/role	Role in implementing the CDN
INS	The DRC's National Institute of Statistics (INS) 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 therefore the approval of national statistics shared with outside.	The National Institute of Statistics (INS) 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. adaptation produced by the sectors.
Ministry of Finance (Ministry of Finance)	Responsible for national budget planning. actively participates in various activities related to public expenditure review and financial management.	It will guarantee the effectiveness of the DRC's financial contribution to this project.
Ministry for Gender, Family and Children	It was set up to develop and coordinate the implementation of government measures relating to the promotion of and respect for women's rights and the protection of the family, and 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 programmes. programmes in the country.	It will support the integration into the project of elements that contribute to closing the gender gap in climate change adaptation and mitigation activities, as well as more gender-balanced access to national 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 managing statistics on the supply, production and consumption of energy resources at national level.	He or she will be responsible for coordinating tasks relating to the collection and improvement of data for the monitoring and reporting of fuel supply, production and consumption activities.
Ministry in charge of Hydrocarbons	Responsible for managing statistics on the supply, production and consumption of hydrocarbons at national level	He or she will be responsible for coordinating tasks relating to the collection and improvement of data for monitoring and reporting on the supply, production and consumption of liquid fuels.

Stakeholders	Responsibility/role	Role in implementing the CDN
Ministry of Transport	It is responsible for managing all data relating to the vehicle fleet (road vehicles, aviation, river and lake navigation).	He or she will be responsible for coordinating all tasks relating to the collection and improvement of data for monitoring and reporting on the transport sector's activities.
National Committee on Climate Change	At present, the guidelines for implementing the projects and programmes are monitored by separate steering committees.	To share a common vision and understanding in the implementation of projects likely to ensure the progress of interventions, initiatives and activities in the field of climate change in a harmonious and collaborative atmosphere.
Technical committee for coordinating and monitoring the implementation of the CDN	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 data and technical information produced as part of the NDC.	<p>The Technical Coordination Committee is intended to be a body for consultation and guidance between the stakeholders involved in implementing the NDC. It brings together delegates from the various public administrations, institutions and organisations with a view to sharing a common vision and understanding in the implementation of projects likely to ensure the progress 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, AFAT and Waste sectors and the implementation.</p>

Stakeholders	Responsibility/role	Role in implementing the CDN
Provincial (technical) committee on climate change	Its role is to contribute to the analysis and technical validation of all the data and technical information produced at provincial level as part of the CDN.	The Technical Coordination Committee is intended to be a body for consultation and guidance between stakeholders at provincial level. It brings together delegates from the various provincial public administrations, institutions and organisations with a view to sharing a common vision and understanding in the implementation of projects likely to ensure the progress 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 implementing NDCs. They will be invited to participate in training courses, workshops and meetings to ensure an effective exchange of knowledge and good practice. In addition, universities could support training processes and the inclusion of these subjects in university degree programmes. This partnership with institutions will make it possible to disseminate the scientific basis for the need to account for natural capital and legislation for various initiatives in this area. process.

Stakeholders	Responsibility/role	Role in implementing the CDN
Civil society organisations	They play an important role at local level in organising, raising awareness, building capacity and carrying out specific actions to adapt to and mitigate climate change. Some of the organisations that will be involved in the project are : CEDEN, CODELT, GTCRR, LINAPYCO, Logos Premier, OCEAN, REBAC, REFADD, REPALEF-RDC, RRN, among others.	They will be invited to take part in activities relating to the implementation of climate change policy and legislation, capacity building and the production/collection of data and information relevant to the operation of the MRV system and GHG inventories.
Private sector organisations	They are a key player in the development of NDCs and the implementation of climate change adaptation and mitigation activities, as they are also affected by climate change. Some examples of private sector organisations are COPEMECO (Confédération des Petites et Moyennes Entreprises), FIB (Fédération des Industriels du Bois), FEC (Fédération des Entreprises du Congo), SAFBOIS and SIFORCO, and agro-industries.	Its participation is required to enable the implementation of climate change policy and legislation, both for the application of mitigation and/or adaptation measures and the completion of NDCs, and for the provision of data and information for the operation of MRV and GHG inventories.

Stakeholders	Responsibility/role	Role in implementing the CDN
The Central Bank of the DR Congo (BCC)	define and implement the country's monetary policy, the main objective of which is to ensure stability in the general price level.	<ul style="list-style-type: none"> <li>- Ensure that climate change is taken into account in macroeconomic projection models and methods and in risk assessments;</li> <li>- make commercial banks aware of the risks associated with climate change, and thus ensure that they are able to manage these risks appropriately;</li> <li>- Invest in green bonds as part of asset purchases to avoid market distortions;</li> <li>- Measuring and estimating the risks that the changes and communicate the conclusions.</li> </ul>
Specialist departments (INERA, METELSAT, SNSA, ONAT)		



## 8. Means of implementation

Characterised 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 therefore faces numerous challenges in terms of socio-economic development. In addition, the country's priority is to minimise the risks of climate change impacts, given 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 funding to facilitate and accelerate the implementation of mitigation and adaptation measures.

### 8.4. Political mechanisms and institutional arrangements

The NDC will be implemented under the leadership of the Ministry of the Environment and Sustainable Development (MEDD), in collaboration with the various sectoral ministries concerned at local, provincial and national level, and with other stakeholders including young people, women and indigenous peoples.

### 8.5. Governance

The results of specific studies will regularly feed into the national policy on climate change, and key laws and regulations will be enacted, including the Climate Change Act and the Land Use Planning Act. A legal text will be issued, establishing the appropriate institutional arrangements to ensure coordination of cross-sectoral actions to combat climate change.

### 8.6. Gender equality, participation of young people and indigenous peoples

The NDC can only be made operational through an inclusive approach, guaranteeing gender equity and equal rights for women and men, boys and girls, and including children, young people, 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 had a National Gender Policy and Action Plan. In 2020, a report on the analysis of gender mainstreaming in climate change adaptation planning and a plan to strengthen the resilience of indigenous women to the effects of climate change were published.

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

The National Assembly recently passed a bill on the fundamental principles relating to the rights of Pygmy indigenous peoples.

#### 8.7. Communication

Clear lines of communication will be developed at different levels (local, provincial, national and international) and between different sectors and stakeholders, with a focus on gender equality and 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 the transfer of technology and capacity building to developing countries. Many developing countries have expressed their need for capacity to support and identify gaps in both technology and expertise to ensure follow-up of bilateral and multilateral resources.

It is essential that the capacity-building provisions of the Paris Agreement are successfully implemented. Technology transfer and capacity building will be necessary to fully implement the DRC's contributions to mitigation and adaptation. Specific needs identified in this framework include among others:

- Access to and removal of barriers to the dissemination of appropriate clean technologies;
- Building climate information systems ;
- Promoting renewable energy and energy efficiency, including private sector involvement;
- Setting up public-private partnerships.

#### 8.9. Involvement of the private sector.

Private sector organisations are key players 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 the implementation of the climate change policy and law possible, both for the application of mitigation measures and the implementation of NDC interventions and for the provision of data and information for the operation of the MRV system and the completion of national GHG inventories.

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

in which these organisations will be involved, although it is foreseeable that they will be linked to the implementation of climate change policy and legislation and contributions on the processes for producing/collecting data and information relevant to the MRV system and national GHG inventories.

The involvement of private-sector players will be particularly relevant in carrying out projects that help to achieve the objectives of the energy and agriculture sectors.

Furthermore, the participation of private sector representatives in the DRC is currently ensured by two entities: the Fédération des Entreprises Commerciales (FEC) and the Fédération de l'Industrie du Bois (FIB). However, the government is in the process of identifying and mapping additional representatives of the main stakeholders, their main areas of intervention and interests, in order to define the decisive incentives that could enable them to better and more fully participate in the implementation of the NDC.

#### 8.10. Financial requirements

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

Given the many budgetary constraints to which the DRC is subject, only a minimal part of its contribution, unconditional measures for mitigation and adaptation combined, representing approximately two percent (2%) of the total estimated financing, will be able to be financed by its own resources. In fact, the countless development priorities in the social, economic, educational, health and infrastructure fields, etc., will receive priority allocation of the resources mobilised at national level and will in no way have to compete with the financing of the NDC.

However, there may be situations where the DRC's priority development objectives are aligned with those of the NDC. Only in such a case would it be justified to finance the NDC's activities from its own funds.

In accordance with the Paris Declaration on Aid Effectiveness, the DRC encourages donors wishing to support the implementation of its NDC to align themselves with the Government's objectives. In addition to those set out in the NDC, these objectives include those of the National REDD+ Strategy and its Investment Plan, as well as the sectoral policies developed as part of the REDD+ interventions financed.

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

### 6.3. NDC financing through carbon markets

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

In view of its carbon potential and the gradual emergence of a carbon market, the DRC government has approved ten urgent measures relating to the sustainable management of natural forest resources.

Among these measures, the institutionalisation of the carbon tax and the creation of the Carbon Market Regulatory Authority come first. These measures are designed to enable the national economy to benefit from the international capital generated by carbon finance.

Capturing the revenue from the sale of carbon credits will help to: (i) increase the national budget; (ii) compensate for the ecosystem services of sequestration and storage of atmospheric carbon by the DRC's forests; and (iii) finance the measures set out in the Nationally Determined Contribution (NDC) under the Paris Agreement.

The DRC reiterates the importance of finalising the negotiations on Article 6 of the Paris Agreement so that the country can sell carbon credits on the international carbon market and thus finance its NDC measures. Also, to enable the country to benefit from adequate compensation for its efforts to reduce and avoid carbon emissions from deforestation and forest degradation, which will benefit the whole world, it is essential that a fair and robust carbon price is established at 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 appropriate price.

In the DRC, the regulation and right of ownership and transfer of ownership applicable to Carbon Emission Reduction Units (UREC) is established by the 2018 Approval Order. As a result, these carbon rights, whose legal status is defined in Article 3 of the said Approval Order, must be exclusively recorded in the National REDD+ Register set up for this purpose. The DRC has decided to develop its own Registry of emission reduction transactions in order to avoid multiple declarations of emission reductions from the forest, i.e. double counting, with the aim of integrating all REDD+ programmes/projects developed in the country. This register will make it possible to track and monitor all emission reductions generated by each programme/project and will provide

regular information on deliveries, transfers and sales of emission reductions.

With a very low level of emissions per capita and per GDP, it will be difficult for the DRC to fulfil its commitments to reduce emissions and contribute to the global effort while transferring ownership of these emission reductions. Consequently, the DRC would like to be able to account for the emission reductions generated under its NDC.

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

#### 6.4. Payments for ecosystem services

One of the mechanisms that could be used to finance the DRC's NDC measures is payments for ecosystem services (PES). PES is a potentially important source of funding for the DRC, as it provides ecosystem services of global value. As the DRC is home to the world's second largest tropical forest, and a biodiversity that qualifies it as one of the world's 17 mega-diverse countries, it provides ecosystem services that benefit the whole world, including developed countries, among others:

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

The DRC plans to set up a national PES programme to ensure that these ecosystem services, provided by the DRC, can be compensated 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 programme could pay the owners of forest resources - forest communities, local or national governments, forestry companies or farmers - to preserve forest resources, establish wildlife corridors and/or maintain the crop varieties most favourable to natural ecosystems. With a view to regeneration, such a mechanism could encourage agricultural installations in savannahs, methods of cultivation under shade, or alternative energies that could reduce the consumption of firewood.

In 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, linked to land tenure security and create synergies between the fight against deforestation and poverty reduction, in order to avoid harmful effects.

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