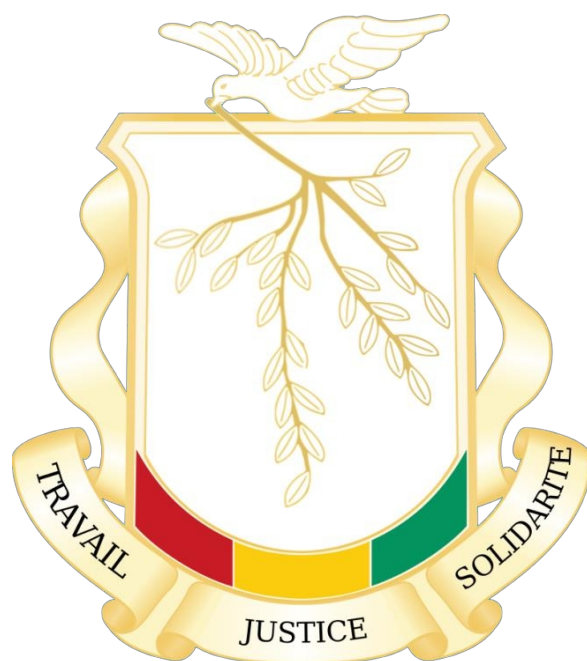


Contribution Determined at National (CDN) of the Republic of Guinea

2021



July 2021

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Acronyms

AP	Paris Agreement	LPDSE	Lettre Politique de Développement du Energy sector
BAU	Business As Usual	MEEF	Ministry for the Environment, Water and Forestry
BMD	Multilateral Development Bank	OECD	Organisation for Economic Co-operation and Development
BSD	Strategy and Development Office	ODD	Economic Development Sustainable Development Objective
UNFCCC	United Nations Framework Convention on Climate Change	PAI	Annual Investment Programme
CDMT	Medium-Term Expenditure Framework	PANA	National Adaptation Action Plan
CDN	Contribution Determined at National Level	PDL	Local Development Plan
ECOWAS	Economic Community of Central African States West Africa	GDP	Gross Domestic Product
CEES	Economic, Environmental and Social Social	PMA	Least Developed Countries
CNCC	National Climate Change Committee	NAP	National Adaptation Plan
CNI	Initial National Communication	PNCCC	National Platform for Concerted Action on Climate Change
COP	Conference of the Parties	PNDES	National Development Plan Economic and Social
CPDN	Expected Contribution Determined at National Level	PNE	National Environmental Policy
CS-CDN	Monitoring Committee Determined Contribution at national level	UNDP	United Nations Development Programme
DNPNC	National Pollution and Nuisance Department and Climate Change	PV	Photovoltaic
EBT	Technological Needs Assessment	RGPH	General Population and Housing Census
ELEP	Light Poverty Assessment Survey	SCN	Second National Communication
FAO	United Nations Organisation for food and agriculture	SDAM	Mangrove Master Plan
IMF	International Monetary Fund	SE4ALL	<i>Sustainable Energy for All</i>
FNPG	National Fund for Gender Promotion	EIS	Energy Information System
FONAEF	National Business Support Fund Women's Economy	SIGPIP	Integrated Management System Public Investment Programme
GHG	Greenhouse gases	SNCC	National Strategy on Climate Change Climate
GIRE	Integrated Water Resources Management	SNDD	National Development Strategy Durable
ICZM	Integrated Coastal Zone Management	TCN	Third National Communication
IGES	Greenhouse gas inventory	EU	European Union
INS	National Institute of Statistics	UNEP	United Nations Environment Programme
IRENA	International Renewable Energy Agency	UTCATF	Land Use, Land Use Change and Forestry
		WWF	World Wildlife Fund

I. Executive summary

Understanding the CDN 2021	
Changes in CDN compared with 2015	<p>The Republic of Guinea has endeavoured to improve compliance with section mitigation of its updated NDC with the provisions of the Paris Agreement and the Rulebook (Decision 4/CMA/2018/3/Add.1). Specified, in particular:</p> <ul style="list-style-type: none"> • Quantifiable information on the reference point for the target(s), including a reference year. • Timetables and/or implementation periods, scope and coverage, planning processes. • The assumptions and methodological approaches used, in particular to estimate and account for GHG emissions. • Explanations of how the NDC is fair and ambitious, and how it contributes to the 2°C objective. • Better documentation of the data used to establish the baseline situation in terms of GHG emissions and the assumptions used to construct the scenarios. • The definition of sectoral indicators and quantified targets for the whole sector.
Purpose of the document	<p>Revision of the 2015 NDC in line with the provisions of the Paris Agreement and incorporating cross-cutting gender/DDG issues.</p> <p>Update of the baseline situation using data from 3^{ème} IGES and a study on the baseline level of emissions from the forestry sector.</p> <p>Revision of unconditional and conditional mitigation targets; inclusion of objectives for the UTCAFT sector</p>
Situation in the Republic of Guinea	
National circumstances	<p><u>2019 population</u>: 12.22 million¹</p> <p><u>GDP growth rate 2020</u>²: 7%.³</p> <p><u>Share of the agricultural sector in GDP</u>: 24.26⁴</p> <p><u>Incidence of poverty</u>: 43.7% in 2019⁵</p> <p><u>Objective</u>: To move from "Least Developed Country" to "Emerging Country" by 2040</p> <p><u>Climate</u>: humid tropical, alternating dry and rainy seasons of unequal length.</p> <p>Average rainfall: 1988 mm per year</p> <p><u>Guinea's share of global GHG emissions</u>: <0.1%.⁶</p> <p><u>GHG emissions per capita</u> (excluding UTCAFT): 1_{teqCO2} (2020)</p>
Conditions of use	<p>Implementation of sectoral measures through the National Economic and Social Development Plan (PNDES 2021-2025 currently being drawn up). Steering of implementation by the Ministry of Planning and the Ministry of the Environment, Water and Forests, based on the guidelines of the National Climate Change Committee and in coordination with the PNDES institutional monitoring and evaluation system.</p> <p>Operational monitoring of implementation and assessment of progress made in complying with the transparency framework by National Management Pollution, Nuisance and Climate Change (DNPNC). The creation of a</p>

¹ Estimated on the basis of RGPH 3 with a growth rate of 2.7% per year

² AfDB Statistics Department and World Development Indicators

³ International Monetary Fund

⁴ INS - Agricultural statistical yearbook, 2019

⁵ Harmonised Survey on Living Conditions of Households in Guinea (EHCVM), 2019

⁶ World Resources Institute, CAIT data for 2017

	The creation of a national agency for climate, the environment and sustainable development is envisaged.
Reference documents	<p>"Guinea Vision 2040 (2016) National Economic and Social Development Plan (PNDES 2016-2020)</p> <p>National Environment Policy (PNE Edition 2016) National Sustainable Development Strategy (SNDD-2019) National Climate Change Strategy (SNCC-2019) National Water Policy (2018) Environment, Water, Livestock, Forestry and Mining Codes</p> <p>Initial National Communication (CNI-2002) National Adaptation Programme of Action (NAPA-2007) Expected Nationally Determined Contribution (CPDN-2015) 3^{ème} Greenhouse gas inventory (2021) Technology Needs Assessment (TNA-2019)</p>
Mitigation component	
Reference year	2020, based on updated and projected data from the 3 ^{ème} greenhouse gas inventory. greenhouse gas emissions (base year 2018)
Commitment period	2020-2030
GHGs taken into account	CO ₂ , CH ₄ , N ₂ O
Emissions sectors covered	Energy, Industrial processes, Agriculture, Land use, Land use change and Forestry, Transport, Waste
Type of lens	Deviation from standard practice (BAU) for each of the sectors concerned. Unconditional reduction in emissions compared with a BAU scenario and following the reference year. Conditional reduction in emissions compared with a BAU scenario and depending on the reference year.

Sector objectives	<p><u>Energy (electricity generation) :</u></p> <ul style="list-style-type: none"> - Unconditional: - 2000 ktCO₂/year compared to BAU - Conditional: - 5 104 ktCO₂ compared with the unconditional scenario <p><u>Transport :</u></p> <ul style="list-style-type: none"> - Unconditional: - 2300 ktCO₂/year compared to BAU - Conditional: - 2600 ktCO₂/year compared with the unconditional scenario <p><u>Mining :</u></p> <ul style="list-style-type: none"> - Unconditional: - 1 740 ktCO₂/year compared to BAU - Conditional: - 1,160 ktCO₂/year compared with the unconditional scenario <p><u>Waste :</u></p> <ul style="list-style-type: none"> - Unconditional: - 34 ktCO₂/year compared to BAU - Conditional: - 130 ktCO₂/year compared with the unconditional scenario <p><u>UTCAFT :</u></p> <p>Biofuels :</p> <ul style="list-style-type: none"> - Unconditional: - 2248 ktCO₂/year compared to BAU - Conditional: - 4480ktCO₂ compared with the unconditional scenario <p>Deforestation :</p> <ul style="list-style-type: none"> - Unconditional: - 4200 ktCO₂/year compared with BAU - Conditional: - 22500 ktCO₂/year compared with the unconditional scenario <p>Catering :</p> <ul style="list-style-type: none"> - Unconditional: 451 ktCO₂/year sequestered compared to BAU - Conditional: - 17 605 ktCO₂/year sequestered compared with the unconditional scenario
Estimated level of mitigation	<p>Excluding LULUCF, the Republic of Guinea has set its unconditional target (CDN) at 2,056 ktCO₂eq/year, i.e. a 9.7% reduction in its emissions in 2030 compared with the trend scenario, i.e. an increase in emissions of 5% per year over the period 2020-2030. The conditional target (CDN+) is set at 3929 ktCO₂ eq/year, or 17.0% compared with the trend scenario, i.e. a growth in emissions of 4% per year over the period 2020-2030.</p> <p>On UTCAFT, excluding reforestation actions (absorptions not taken into account), the Republic of Guinea sets its unconditional target (CDN) at 20% reduction of its gross emissions in 2030 compared to the trend scenario. The conditional target (CDN+) is set at 49% compared with the trend scenario.</p>
Cost of implementing commitments	<p>At least USD 13.8 billion</p> <p>The Republic of Guinea is making part of its contribution (CDN+) conditional on the mobilisation of funding that can be accounted for under the Convention's Financial Mechanism.</p>
Adaptation component	
Manifestations of climate change (horizon 2030)	<p>Increase in average temperatures</p> <p>Average annual rainfall is tending to increase slightly, but with greater inter- and intra-annual variability.</p> <p>Rise in sea level and retreat of the coastline</p>
Areas covered	<p>Water resources / Coastal zone and blue economy / Agriculture, livestock farming and forestry sector</p>
Cost estimates adaptation	<p><i>Macroeconomic estimate:</i> USD [713-1922] million</p> <p><i>Estimated measures included in the NDA:</i> USD 1 billion</p>

intention	The actions undertaken are said to have "no regrets".
Framework documents for communication adaptation	National Communications and, from 2023, the National Adaptation Plan Transparency reports

II. Revision of the NDC of the Republic of Guinea

a. International context

The Republic of Guinea ratified the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol in 1993 and 2005 respectively. It has since developed strategies to combat climate change, including its Initial National Communication (CNI), based on a greenhouse gas inventory (IGES) in 2001 (based on 1994 emissions), its Second National Communication (SCN) (based on 2000 emissions). Lastly, the Republic of Guinea drew up its National Action Plan for Adaptation to Climate Change (NAPA) in 2007 and launched several projects to implement the plan. It is also currently in the process of drawing up its Third National Communication (TCN) and its National Adaptation Plan (PNA), which should be completed in 2023 and 2024 respectively. As part of the work on the TCN, a 3^{ème} IGES was drawn up in the first half of 2021 and will form the basis of the reference data for the revision of the CDN.

Five years after its adoption in Paris at COP21 of the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement (PA) on climate became effective in 2020. While science regularly demonstrates the scale of the global efforts required to meet the collective commitment, the Republic of Guinea, having ratified the Paris Agreement on 22 April 2016, intends to reaffirm and strengthen its commitment to contribute to the global response to the threat of climate change through the revision of its NDC submitted in 2015.

b. National circumstances

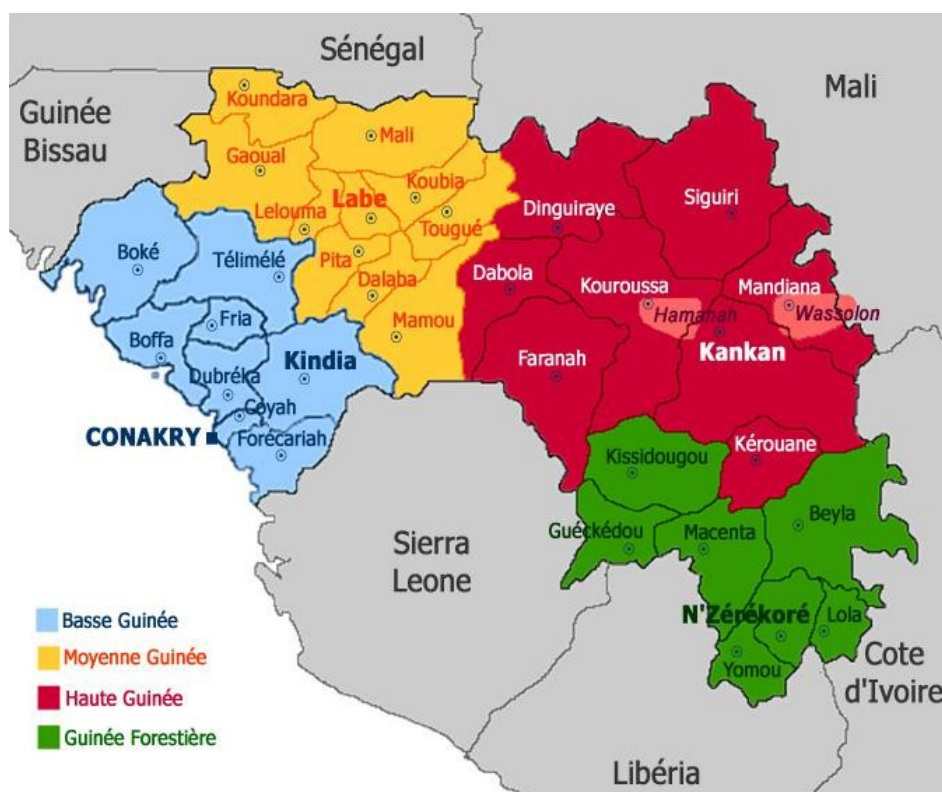


Figure SEQ Figure* ARABIC1- Natural regions and prefectures of the Republic of Guinea

With a surface area of 245,857 km², the Republic of Guinea has a population of around twelve million inhabitants, with a density of 48 inhabitants per km². It is characterised by four major zones

eco-climates: Lower Guinea, Middle Guinea, the Guinea and Guinée Forestière.

Its hydrographic network is very dense,

1166 rivers divided into 23 catchment areas, 14 of which are international. It enjoys a humid tropical climate, with two alternating seasons of unequal length: the dry season, during which the harmattan blows, and the rainy season, governed by the West African monsoon. The rainy season lasts 5 to 7 months (April-October) from north to south, with a national average of 1988 mm of rainfall per year, although there are considerable differences depending on latitude, topography and continental location (4,000 mm in Conakry, 930 mm in Koundara)⁷. Administratively, the country is divided into 7 regions (Boké, Kindia, Mamou, Faranah, Kankan, Labé, Nzérékoré) and one Governorate (Conakry), 33 Urban Communes and 304 Rural Development Communities.

With one of the lowest HDIs in the world (178^{ème} out of 189 countries⁸), the Republic of Guinea faces two major challenges: lifting its population out of poverty and ensuring the country's food security, at a time when its population is growing by 2.7% a year (INS 2019) and the number of inhabitants is expected to reach 16 million in 2030 (RGPH 2014).

Table 1: Demographic data

Indicators	Data (year of reference)	Sources	Average ECOWAS
Population	12.21 million inhabitants (2019)	INS	N/A

⁷Second national communication, 2018

⁸ Human Development Report 2020, UNDP

Demographic growth rate	2,7 % (2019)	INS	2,57
Density	51 km² (2018)	BM	99,6
Human Development Index (and rank)	0,477 (178)	UNDP (2019)	0,506
GINI coefficient on inequality income	33,7 (2012)	BM	39,7
Proportion of the population below the poverty line (and depth of poverty)	43,7% (12,5) (2019)	INS	N/A
Urban	35,4% (9,6)		
Rural	64,7% (22,6)		
Literacy rate	32% (2014)	INS	
Conakry	62,5%		
Urban	55,4%		
Rural	17,6%		
Life expectancy at birth	61.1 years (2019)	BM	61,3
Men	60.5 years (2019)		59,8
Woman	61.6 years (2019)		62,7

Through its forward-looking strategic vision document "*Guinée Vision 2040*", the Republic of Guinea aims to move from the status of "Least Developed Country" (LDC) to "Emerging Country" by 2040, which implies a double-digit GDP growth rate by 2030, supported in particular by industrialisation for the processing of agricultural and mining products. The Republic of Guinea has significant economic potential in agriculture, fisheries, mining and hydroelectric resources. Guinea has over a third of the world's bauxite reserves (40 billion tonnes with a grade of over 40%) and significant gold reserves (over 700 tonnes)⁹. In addition, the Republic of Guinea has the world's largest unexploited iron deposits (20 billion tonnes), with top-quality ore (grade over 60%); and proven diamond reserves estimated at over 30,000,000 carats, with probable reserves of over 500,000,000 carats. This potential is currently only marginally exploited, and GDP growth was expected to be 6% in 2019. That same year, industry and agriculture accounted for 24% and 20% respectively of the value of GDP.

Despite the double health crisis of 2020 (Ebola and Covid-19), Guinea's economy grew by 7% in 2020, according to recent IMF data, buoyed by the results achieved by the mining sector during the year with a sharp rise in global demand for bauxite. Despite the continued increase in mining exports in 2020 - as over the past five years, with a 4-fold increase in exported bauxite tonnages - revenues from the mining sector, which account for more than a third of government revenue¹⁰, have not risen, due to the fall in bauxite prices. However, growth forecasts for 2021 are less optimistic (5.2%) due to the repercussions of the health crisis on other sectors of the Guinean economy. Real growth should continue to be strong over the next few years (estimated growth in 2022 of 6.1%¹¹), underpinned by continued robust expansion in the

⁹Mining Sector Development Plan, Ministry of Mines and Geology, 2018

¹⁰ EITI, 2018

¹¹ IMF forecasts

mining sector, even faster than expected, and consolidated by a gradual recovery in the non-mining economy.

Given these ambitions and population growth, the Republic of Guinea's energy needs will double in the space of 20 years. However, as the forward-looking document *Guinée Vision 2040* points out, *"this destiny must be achieved while respecting a protected environment that secures the future of generations to come"*. The NDC's GHG emission reduction commitments therefore reflect national strategies and sectoral plans already adopted at national level (*Paris Agreement, Art.4.4*), but which require the urgent mobilisation of massive resources for rapid implementation and lasting results.

c. Planning process for the revision of the NDC

The process of preparing the NDC began in November 2019 with UNDP support through a workshop broadly involving Ministries, Civil Society and Technical and Financial Partners who validated the principle of a review process. Under the guidance of the Direction Nationale des Pollutions, Nuisances et Changement Climatique (DNPNC) within the Ministère de l'Environnement, des Eaux et Forêts (MEEF) and with the support of the UNDP Climate Promise, The project began in the first half of 2020 with a review of the implementation of the commitments made in the 2015 NDC, with financial support from the African Development Bank, and the mobilisation of a team of experts to revise the NDC, which was officially launched in July 2020 to comply with the provisions of Decision 1/CP.21 §24. The health context of Covid-19 placed severe constraints on the authorities involved, with many of the workshops and preparatory meetings organised by videoconference. However, in order to ensure wider consultation with the national players, particularly in order to collect data and set the ambitious course, the following events were organised:

- An online survey to *"take the pulse of Guinean society on how it feels about climate change, the level of knowledge of the Paris Agreement, the UNFCCC and the opinion on the measures taken (or to be taken) in the Republic of Guinea on mitigation and adaptation"*;
- Seven consultation workshops for the revision of the CDN-Guinea, convened by letter N°679/MEEF/2020 dated 20 August 2020 in the regional capitals were held from 24 August to 07 September 2020. However, the limited capacity available for the organisation of these workshops was a constraint on the broad mobilisation of civil society.
- The mobilisation of a Strategic Orientation Committee including 10 sectoral ministries, including their Gender & Equity focal points, as well as representatives of civil society, made it possible to validate the diagnostic report for the revision of the NDC, the guidelines for the construction of scenarios and the validation of the provisional NDC, including the structure of the document in accordance with the provisions of the Rule Book.
- A first national validation workshop will be held on 11 December 2020.

In view of the new data available, announced for the 1^{er} semester 2021, and the reaffirmed ambition of the Guinean State, a new revision of the NDC has been carried out with the support of the World Bank and has led to the implementation of the following latest activities:

- The holding of a national validation workshop on 21 July 2021, attended by nearly 80 participants (ministries, research institutes, civil society, the private sector and technical and financial partners).
- CDN submission validated by the Council of Ministers and information provided to the National Assembly
- Submission to the provisional CDN registry administered by the UNFCCC Secretariat.

This consultation process will be continued in the run-up to the 2nd round of NDCs (*Paris Agreement, Art.4.9*), but with three forthcoming changes:

- An anchoring on the institutional architecture for implementing and monitoring the NDC, which is currently evolving and will be consolidated through the work on the partnership and investment plan;
- Greater involvement of civil society and the private sector, particularly in the diagnostic phase to assess the extent to which commitments are being met.
- Taking into account the results of the overall assessment, in accordance with article 4, §9, of the PD, in order to present the highest possible level of ambition during the next CDN cycles.

The sectoral commitments made under the NDC will be implemented through the National Economic and Social Development Plan (PNDES) 2021-2025 and 2026-2030, the Republic of Guinea's main planning tool, under the guidance of the Ministry of Planning and in close collaboration with the Ministry of the Environment, Water and Forests. Within the framework of the NDC Partnership and with the support of the World Bank, an investment plan for actions taken under the NDC is currently being drawn up, taking into account investments planned under the national budget and the budget of local authorities (unconditional commitments), and will be accompanied by a partnership plan designed to mobilise financial partners and the private sector (conditional budget). The cross-cutting measures to support the implementation of and compliance with the transparency framework of the Paris Agreement will be the subject of specific budgetary management by the Ministry of the Environment, Water and Forests; the support of technical and financial partners for the application of these cross-cutting measures, including the application of the evolution of the target institutional architecture, is requested.

As a member of the Economic Community of West African States (ECOWAS), the Republic of Guinea applies Community directives and regulations in the areas targeted by its NDC (shared water resources, access to energy services, increasing regional agricultural productivity, etc.). It is also taking part in ongoing initiatives within the ECOWAS Commission to help harmonise the framework for monitoring financial climate flows in the regional area, for greater comparability and enhanced climate action. To date, however, the Republic of Guinea has set its level of effort in application of article 4, §2, of the Paris Agreement, independently and not in concert with the other Member States (article 4, §16-18, of the Paris Agreement).

d. Application of the provisions of Decision 4/CMA.1 relating to the information to be provided to make the NDC clear, transparent and comprehensible

When the first NDC was drawn up in 2015, no specific guidelines or rules had been issued to harmonise the commitments of the country Parties and thus make them comparable. Like the other countries, the Republic of Guinea therefore made certain choices in terms of content and format. The provisions of the Rulebook adopted at COP24 and COP25 will not apply until 2024, for the second NDC cycle, but countries are invited to take account of these provisions as far as possible when updating their NDCs in 2020 (*Decision 4/CMA.1 §7*). For the NDC revised in 2021, the Republic of Guinea wishes to start moving towards the provisions that will become mandatory from 2024, designed to strengthen transparency and the confidence of the Parties. Accordingly, the Republic of Guinea has sought to improve the compliance of the mitigation section of its updated NDC with the provisions of the Paris Agreement and the Rulebook (*Decision 4/CMA/2018/3/Add.1*). To this end, the updated NDC specifies, in particular:

- Quantifiable information on the reference point for the target(s), including a reference year.
- Timetables and/or implementation periods, scope and coverage, planning processes.
- The assumptions and methodological approaches used, in particular to estimate and account for GHG emissions.
- Explanations of how the NDC is fair and ambitious, and how it contributes to the 2°C objective.
- Better documentation of the data used to establish the baseline situation in terms of GHG emissions and the assumptions used to construct the scenarios.
- The definition of sector indicators and quantified targets for all the commitments made.

As an LDC, the Republic of Guinea still faces major challenges in implementing all the provisions set out in *Decision 1/CP.21, §31*. This concerns in particular the baseline situation of the UTCAFT sector, with the urgent need to carry out a new forest inventory to accurately assess the current sequestration capacity of Guinean forests, and also to carry out an in-depth study of the vectors of deforestation. To this end, the Republic of Guinea requires the support of the international community to strengthen its capacities (*Paris Agreement, Art.11.3*).

e. Application of the modalities, procedures and guidelines for the transparency framework for measures and support referred to in Article 13 of the Paris Agreement (Decision 18/CMA.1)

The Republic of Guinea is committed to continuous improvement of its transparency framework, so as to be in a position to draft its first biennial transparency report and its national stocktaking report by 31 December 2024 at the latest (*Decision 18/CMA.1 §3*). A number of major advances have been made in recent years and are already making it possible to better structure the Republic of Guinea's transparency framework, thanks in particular to the results of the 2014 Statistics Act

and the regular publication of statistical yearbooks by the National Statistics Institute. More recently, the year 2020 will see the launch of the Integrated Public Investment Programme Management System (SIGPIP), which should remedy the weaknesses highlighted by several audits in the monitoring and evaluation of public investments, including in the fight against climate change. Lastly, as part of the process of drawing up its NCCT, the Republic of Guinea is currently improving the IGES system and the skills of the team in charge of it. In 2020, this improvement will also be accompanied by the emergence of a network of climate focal points within the sectoral ministries, whose mandate is, among other things, to help collect data with a view to compiling GHG inventories. However, several urgent challenges remain to be overcome with the support of the international community:

- Strengthening the system for producing and updating national GHG inventories;
- The overhaul of the institutional framework for steering, implementing and monitoring climate action and the commitments made under the NDC;
- The introduction of a legal framework for the climate to make this system more robust and better coordinated;
- Consolidation and strengthening of the system for monitoring and *ex-post* evaluation of the commitments made under the NDC: the revised NDC of 2021 includes specific indicators and targets for each commitment. However, there is as yet no robust, centralised monitoring and evaluation system for the Republic of Guinea's NDC, and this still needs to be built up in conjunction with the monitoring of the implementation of the PNDES.
- Establishment of the system for monitoring support received under the NDA (Section I of Part VI of the Annex to Decision 18/CMA.1): major efforts to define the nature of the funding monitored, to reference it in the information and budget management systems and to coordinate will have to be made if the Republic of Guinea is to be in a position to comply with these obligations.
- Ensuring that public policies on climate action are consistent, and that the objectives of the NDC are integrated across the board into all the public policies and sectoral strategies concerned.

f. Gender mainstreaming

With a gender index of 0.439 (OECD SIGI Index), Guinea is among the 8 countries (78 out of 86) with the greatest disparities between women and men in the non-OECD region. According to the World Bank¹², reducing gender inequality in the Republic of Guinea could potentially accelerate per capita GDP growth by 0.6 percentage points per year, or 10.2% overall, by 2035. Beyond the fact that this increase in GDP is likely to strengthen adaptation capacities in general, gender mainstreaming in the adaptation and mitigation measures of the NDC is a priority given the tasks generally assigned to women in the home, their over-representation in the sectors most impacted by climate change (agriculture, livestock and fisheries) and their low representation in decision-making bodies. This priority is also highlighted in the PNDES (2016-2020).

¹²Guinea - *The economic benefits of a gender-responsive society*, World Bank, 2019

The NDC's mitigation and adaptation measures are all designed to improve as a priority the adaptive capacities and resilience of women and vulnerable populations in Guinea. To target these groups as a priority, four cross-cutting actions are prioritised: (i) providing sufficient operating resources for the "Gender and Equity" departments created in 2015 in all ministries¹³, (ii) integrating adaptation and mitigation issues into the resources dedicated to the National Fund to Support Women's Economic Activities (FONAEF) and the National Fund for the Promotion of Gender (FNPG), (iii) the effective application of the law on parity adopted on 2 May 2019, under which women must make up 50% of electoral lists, (iv) the introduction of appropriate technical training in relation to climate change for young people, women and people with reduced mobility.

In addition, gender-specific monitoring, outcome and impact indicators are explicitly mentioned in the adaptation and mitigation measures of the NDC, with the aim of promoting solid gender mainstreaming in the planning of public policies, and drawing the necessary conclusions on their possible differential effects. The impact indicators measure both the standard of living (prevalence of poverty, malnutrition rates) and the quality of life (access to water and sanitation infrastructure) of women. The monitoring and results indicators aim to strengthen their autonomy and their place in decision-making bodies (improving skills, training in income-generating activities, inclusion in pastoral conflict management committees).

III. Mitigation commitments

a. Quantified information on the reference point, including, where applicable, a base year.

General information

The reference year for the 2021 NDC is 2018, the basis for the 3^{ème} greenhouse gas inventory (IGES) carried out in 2021 with a view to the publication of the Third National Communication (TCN). The sectors taken into account in the 3^{ème} IGES are: energy, waste, agriculture, industry including mining, households and transport. To estimate emissions from the UTCAFT sector, the Reference Emission Level for Forests (NERF) was calculated.

Table 2: National emissions of the Republic of Guinea in ktCO₂eq LULUCF according to the 3rd IGES and the NERF

National emissions of the Republic of Guinea in ktCO ₂ eq according to 3 ^{ème} IGES and NERF		
Sector	Emissions in 2018 in ktCO ₂ (TCN)	Emissions in 2020 in ktCO ₂ (TCN)
Energy	3 863	4475
- Electricity	295	357
- Industry including mining	1 192	1 441
- Transport	2 155	2 421
- Households	4	5

¹³Decree no. 1257 of the Ministry of the Civil Service, State Reform and Modernisation of the Administration

-Other gases from energy combustion	217	251
Waste	298	317
Agriculture	7 537	7 996
Industrial processes	136	153
Total (excluding UTCAFT)	11 834	12 940
Sector		Gross emissions tCO₂eq/year (NERF, 2020)
UTCAFT (biofuels included, absorption excluded)	-	33 587
Total (including UTCAFT)		46 527

ENERGY SECTOR

The energy sector accounts for emissions from the following sectors: electricity generation, industry including mining, transport, households and other gases from energy combustion. Emissions figures are taken from 3^{ème} IGES: in 2018, emissions linked to the energy sector were 3,863 ktCO₂ eq; according to the projections made, the sector's 2020 emissions will amount to 4,475 ktCO₂ eq.

The energy consumption profile shows the growing share of fossil fuels in the energy mix. The growth in fossil fuel consumption is more rapid because of the growth seen in certain sectors, in particular road transport and industrial and mining processes.

⇒ Electricity generation

In 2018, 45% of Guinean households had access to electricity¹⁴. It should be noted that the rate of access to electricity in 2013 was only 18.1%, which reflects a recent sharp increase thanks to the commissioning of the Kaléta dam (2015). This progress should accelerate further with the recent commissioning of the Souapiti dam, whose 450 megawatt (MW) capacity will, in time, almost double the installed electrical capacity. There are huge disparities between urban and rural areas: in rural areas (two-thirds of the country's population), only 22.8% of households have access to electricity, compared with 86.7% in urban areas¹⁵. Guinea still has a growing electricity production deficit, due to the combined effect of a rapid increase in demand (which is expected to accelerate further in the coming years with the planned development of major mining sites) and relatively slow growth in supply, given the scale of the investment required. Overall, installed capacity is estimated at around 562 MW, 65% of which will be hydroelectric and 35% thermal, for a total consumption of 1,182 MWh of hydroelectricity and 732 MWh of thermal energy in 2018. Based on estimates of growth in consumption, this could rise to 6,000 MWh by 2030. The mining sector is the main industrial source of electricity demand. Guinea has a large

¹⁴ Demographic and Health Survey 2018, Institut national de la statistique, July 2019

¹⁵ *Ibid*

hydroelectric potential estimated at more than 6,000 MW (of which around 12% has been harnessed to date), as well as significant solar potential (4.8 Kwhm²/day).

The authorities intend to realise this potential through the PNDES (2021-2025), the Lettre de Politique de Développement du secteur de l'Energie (LPDSE), the Déclaration de Politique Générale and the Plan d'Action 2009-2025. In this respect, the strategic option of the PNDES is to contribute to the promotion of a sustainable energy development model, based essentially on social and regional equity, renewable energies and environmental control of energy production and consumption processes.

Translated in terms of priorities, this strategic option involves (i) refurbishing the electricity sub-sector's production and distribution apparatus, and (ii) reforming its institutional framework, (iii) the mobilisation of Guinean hydroelectric potential, in particular large and micro/mini power stations, (iv) the promotion of "decentralised" solutions involving local authorities and the private sector at rural level, (v) the promotion of solutions to preserve natural resources, (vi) the use of innovative techniques such as biogas digesters (DAB), (vii) meeting the needs of rural and peri-urban areas for the implementation of a programme of access to energy services, in line with the objectives of the Renewable Energy Policy (PERC) and the ECOWAS Energy Efficiency Policy (PEEC).

In this respect, the PNDES provides for: (i) the completion of several major hydroelectric projects; (ii) the continuation and completion of the institutional structural reforms undertaken in the sector at both central and decentralised levels (including the introduction of an appropriate legal and regulatory framework and the restoration of EDG's financial equilibrium); (iii) the electrification of rural localities ; (iv) network extensions in peri-urban areas; (iv) diversification of energy sources, giving priority to renewable energies, in particular micro-hydro power stations, solar and wind energy, biomass and domestic fuels; (v) participation in the process of interconnecting sub-regional electricity networks.

⇒ Industrial processes

Despite a difficult international economic climate, the reforms undertaken have led to renewed investment in the bauxite and gold sectors. The bauxite region north-west of Boké is undergoing unprecedented development. Overall investment in mining projects could reach USD 50 billion over the next decade.

In three years, bauxite production has risen from 20.2 million tonnes (Mt) in 2014 to 87.7 Mt in 2020, an increase of 334% over the period¹⁶ . The outlook for production over the next few years is in line with this trend. According to a study by CM Group in 2018, by 2023 Guinea would supply 32% of the world's bauxite production (compared with around 16% in 2018).

The 2019 Sustainably Growing Guinea's Bauxite-Aluminium Industry report estimates that CO₂ emissions could soar as the sector grows and refinery operations expand. In fact, the production of one tonne of aluminium can emit between 1.7 tonnes and 23 tonnes of CO₂, depending on the energy used in the processes, particularly during the smelting in

¹⁶ Mining statistics bulletins, INS

aluminium¹⁷. The development of alumina refining and aluminium smelting is therefore likely to significantly increase the country's electricity demand and CO₂ emissions if the capacity is not installed using renewable energies.

In addition, the Republic of Guinea has the world's largest untapped iron reserves, estimated at more than 20 billion tonnes and of exceptional quality (iron content of more than 60%). Simandou Lots 1 & 2 were awarded to the SMB Winning consortium in November 2020, with the signing of the agreements and ratification by parliament. This reallocation means that this gigantic mining potential can be exploited over the period 2020-2030.

The mining development programme¹⁸ forecasts bauxite production of 150 million tonnes per annum (MTPA) by 2030, and the development of iron ore deposits worth around 140 MTPA.

In the BAU scenario¹⁹, mining activity could emit around 5,880 ktCO₂ per year in 2030, to which will be added :

- transport from mines to ports, mainly by rail by 2030,
- port operations,
- Bunker fuels
- bauxite processing units for 500,000 tonnes of alumina per year.

The fourth pillar of the Mining Sector Development Programme (MSDP) aims to ensure that the natural capital affected by the mining sector is preserved through the following specific objectives: (i) clean technologies in the established mining industry, (ii) increased protection of biodiversity in mining areas, (iii) systematic disaster risk assessment/management. It therefore does not include a climate change mitigation strategy or emission reduction targets. The sector's strong growth, which exceeds the scenarios envisaged in 2015, therefore requires a concerted approach with stakeholders to promote sustainable development.

⇒ Transport

Data for the transport sector have been updated using 3^{ème} IGES. This sub-sector is the main source of fossil fuel consumption in Guinea, generating emissions of 2,155 ktCO₂eq in 2018. With regard to infrastructure and services for other modes of transport, the PNDES is based on a multimodal approach to transport development, integrated into the sphere of agricultural production and mining. In particular, several railway rehabilitation and construction projects have been identified and financed by the private sector:

- The Transguinéen, about 650 km long at a cost of USD 5.5 billion, linking the Simandou mine to the future deep-water port of Matakang, with a capacity of 80 million tonnes per annum (MTPA); built by SMB-Winning;

¹⁷ https://www.bilans-ges.ademe.fr/documentation/UPLOAD_DOC_FR/index.htm?aluminium.htm

¹⁸ Source: December 2020 interview, Strategy and Development Office, Ministry of Mines.

¹⁹ Source of emission factors: "Summary of literature values for CO₂ emissions of bauxite, copper, gold, and iron ore mining", Michael Tost & Al. Sustainability 2018, 10, 2881; doi:10.3390/su10082881

- Mount Nimba - Liberia, 50 km, from 2025, by SMFG ;
- Dapilon to Santou, 112 km, in 2022 by SMB ;
- Téliélé to Boffa, 120 km, in 2025, by TBEA ;
- Gaoual to Kamsar, 120 km, by Alliance Mining Promoted (feasibility study for commissioning before 2030);
- Mamou to Port de Benty, 270 km, by Anglo-AfricanMinerals (commissioning before 2030).

These railway lines represent a potential of 151 MT.km/day of ore transported in 2025 and 193 MT.km/day in 2030.

Conakry's Urban Transport Plan (PDU) also provides for the development of :

- A 33.5km Le Prince Kaloum / Sonfonya BRT line via a corniche.
- A 33.5 km HRT Kaloum / Kagbelen line.

This work is estimated to cost €422 m i l l i o n by 2030, for a cumulative mitigation balance of -919 ktCO₂eq by 2030.

AGRICULTURE SECTOR

The 3^{ème} IGES estimates emissions from the agricultural sector at 7,537 ktCO₂ eq in 2018 (i.e. around 63% of the total excluding LULUCF). It should be noted that emissions from slash-and-burn are considerable and represent the main source of deforestation, but are accounted for in the LULUCF sector. The following table shows emissions from the agricultural sector, all GHGs combined, by emitting practice. The main source of emissions is livestock farming, which accounts for 71.5% (due to the different ways in which manure and enteric fermentation are managed).

Table 3: Average emissions from the agricultural sector over the period in 2018 and 2020, all GHGs combined in ktCO₂eq (Source: 3rd IGES)

Emissions item	Average emissions in 2018 (3rd IGES) in ktCO ₂ eq	Share of emissions item / total agricultural sector	Average emissions in 2020 ktCO ₂ eq	Share of the emissions item/total for the agricultural sector
Enteric fermentation	5 215	69,2%	5 532	69,2%
Manure management	172	2,3%	182	2,3%
Growing rice	0	0%	0	0%
N ₂ O from agricultural soils	2 105	27,9%	2 233	27,9%
Burning of residues agricultural	43	0,6%	46	0,6%
Total	7 535	100%	7 993	100%

In the absence of precise data, emissions from rice growing have not been assessed in the TCN, but deserve to be studied specifically as they represent an interesting potential for mitigation through improved practices.

Over the period 2013-2018, the cultivated area of the main food crops grew by an average of around 4% per year, reaching 4.4 Mha in 2018²⁰. Livestock farming also grew by more than 5% per year, all livestock combined. The assumption is that agricultural emissions will continue to grow by an average of 6% per year. In 2020, based on the reference year of 2018, emissions are estimated at 7,993

ktCO₂eq.

Clear strategic directions should be proposed in future NDCs to accelerate the transition to slash-and-burn agriculture, controlled rice cultivation and efficient use of agricultural residues. However, there is no quantified commitment for this sector in the 2021 NDC, given the country's priority food security issues. A more accurate inventory of the sector's emissions and the assessment and prioritisation of potential mitigation measures is a priority in order to anticipate the country's future commitments in this strategic, high-emission sector.

WASTE SECTOR

Emissions from the waste sector amounted to 298 ktCO₂eq in 2018, with growth of 3% between now and 2030.

Until now, solid waste has not been treated in the country, including in the largest cities, resulting in a significant loss of earnings in terms of health, the environment and the economy.

However, a large-scale project is currently being studied to collect Conakry's waste and convert it into electricity by burning methane. The project plans to collect a cumulative 1,740 kt of treated waste by 2025 and a cumulative 4,148 kt by 2030. **This would save around 110 kt CO₂eq/year by 2030, and a cumulative total of more than 900 kt CO₂eq by then (Bilan Carbone du projet).**

UTCAFT SECTOR

Emissions from deforestation, degradation and forest management were estimated using an approach and methods consistent with the establishment of the Reference Emission Level for Forests (NERF) under the UNFCCC's REDD+ programme. The NERF was carried out in 2021 and validated at national level to specify emissions from the LULUCF sector, for which national data are still very incomplete. **Carrying out a complete forest inventory remains a major priority for the country** in order to assess the precise state of Guinean forests and the drivers of deforestation, with a view to building a comprehensive protection and restoration strategy, given that the national forest inventory is very old (1988). In particular, adapted and localised strategies need to be developed for all the deforestation factors, with slash-and-burn agriculture and natural bush fires at the forefront. Given the rich biodiversity of Guinean forests, it might be appropriate to include the monitoring of forest habitats and fauna in a National Forest and Fauna Inventory.

The equations used to estimate emissions from deforestation, forest degradation and sustainable forest management were taken from volume 4, chapter 2 of the IPCC guidelines (2006) and its supplement (2019). The "*Methods and Guidance Document (MGD)*" of the "

²⁰ANASA, 2019

The Global Forest Observations Initiative has also been used to implement the above guidelines.

The UTCAFT sector includes the following REDD+ activities: deforestation, forest degradation and forest management. Emissions have been calculated for each of these activities. These emissions and the methodologies used to calculate them are detailed below:

- Land use change and calculation of emissions linked to deforestation

The activity data, relating to the change in land use between 2015 and 2020, was produced using a land use change map.

Based on the 2014 land cover map produced by NASA Goddard Space Center, annual forest loss was mapped for the period 2015 to 2020 using a disturbance algorithm based on NDVI and other disturbance indices available on Google Earth Engine.

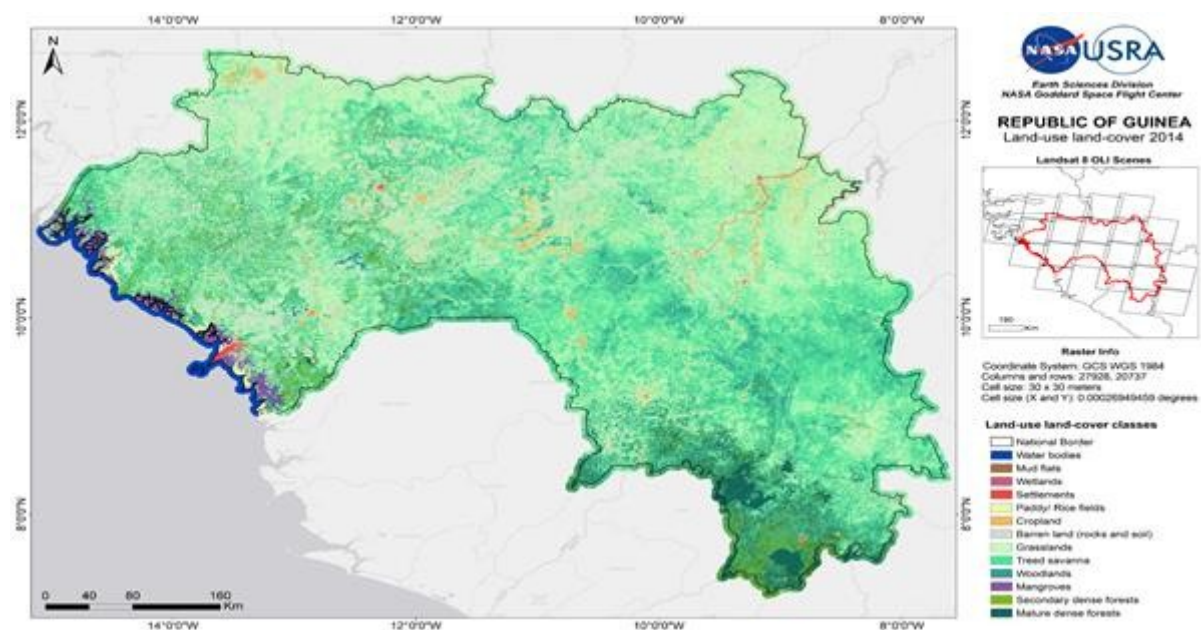


Figure 1: 2014 land use map for the Republic of Guinea

The land use change map was then obtained and shows the loss of forest from 2015 to 2020 as well as the remaining forest land in 2020.

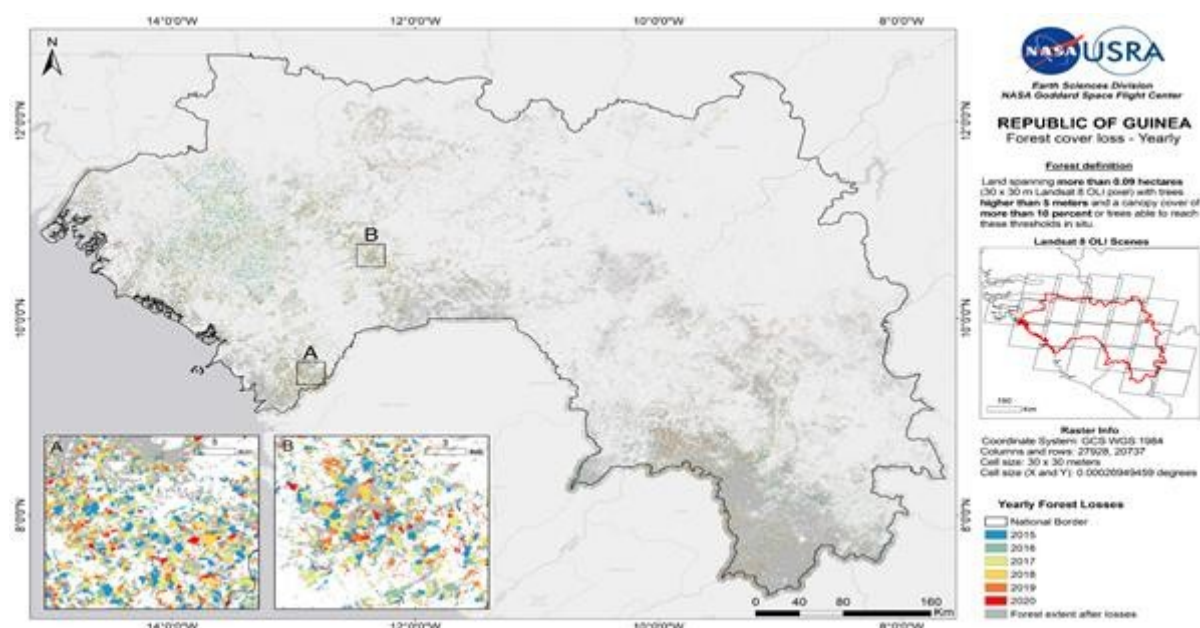


Figure 2: Stratification map - Forest loss between 2015 and 2020 for the Republic of Guinea

Based on the forest cover change map, the annual forest losses in Guinea between 2015 and 2020 have been calculated and presented in the following table:

Table 4 - Forest situation for the period 2015-2020 (NERF 2021)

Forest class	Situation in 2014 (ha)	Losses over the period 2015-2020 (ha)	Remaining 2020 (ha)	Deforestation rate
Light forest	2 744 272	689 957	2 054 315	-0,05
Secondary forest	778 128	498 903	279 226	-0,16
Dense humid forest	868 878	83 380	785 499	-0,02
Mangrove forest	217 131	9 072	208 058	-0,01
TOTAL	4 608 409	1 281 312	3 327 097	-0,053

Open and secondary forests were the most affected by deforestation over the period, with deforestation rates of 5% and 16% respectively and deforested areas of around 700 kha and 500 kha.

By combining the above observations with known emissions factors for deforestation, it has been possible to calculate deforestation-related emissions (in MtCO₂/year). These emissions amount to 17,041 kTCO₂/year on average over the period, giving a total of 102,249 ktCO₂ over the period [2015-2020].

Table 5: Emissions linked to deforestation (in ktCO₂ eq/year)

Deforestation in...	Average annual
Wooded savannah	277 853
Clear forest	7 527 569
Secondary forest	4 270 629
Dense humid forest	2 963 338
Mangrove forest	2 002 256
Average	17 041 646

- Forest degradation - methodology and calculation of emissions

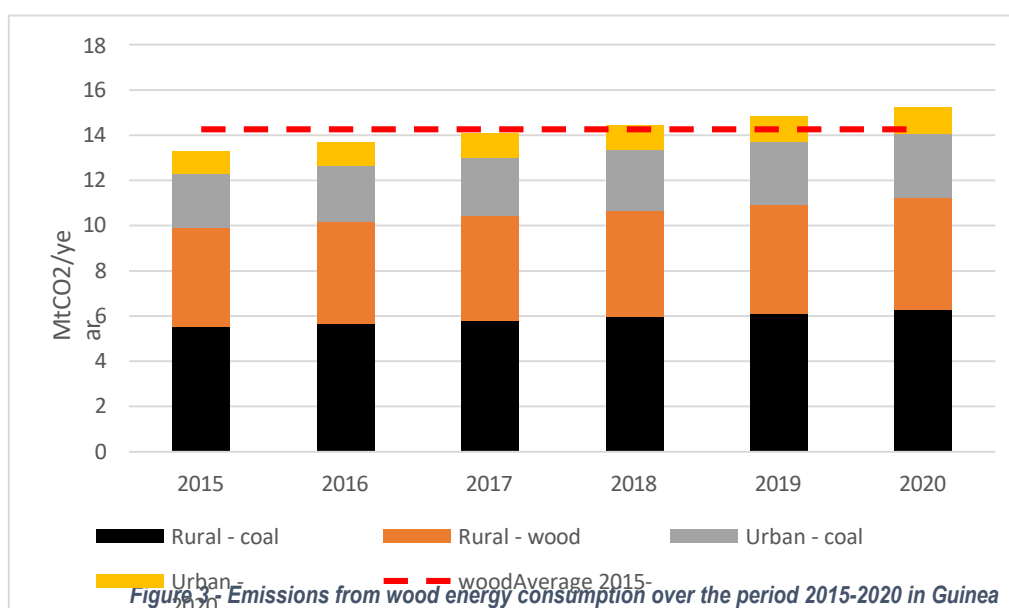
In Guinea, the main cause of emissions due to forest degradation is the consumption of wood energy, which includes firewood and charcoal.

The calculation of emissions from wood energy is based on census data and studies that have analysed and quantified the consumption of firewood and charcoal for rural and urban areas (INS 2014, PANEB 1999)). In addition, as wood energy consumption is directly linked to population size and growth, the National Statistics Institute's demographic model was used to take account of population growth and the subsequent increase in emissions.

Table 6: Consumption of charcoal and wood in rural and urban areas in tonnes of dry matter per year

Year	Consumption in rural areas		Consumption in urban areas	
	Coal	Wood	Coal	Wood
2015	5 519	4 371	2 410	994
2016	5 678	4 497	2 479	1 023
2017	5 816	4 607	2 570	1 06
2018	5 956	4 718	2 663	1 099
2019	6 097	4 830	2 759	1 138
2020	6 268	4 965	2 836	1 170

Emissions due to wood energy consumption during the reference period are estimated at an average of 14,254 kTCO₂/year over the period 2015-20 and are presented in the figure below.



The National Climate Change Strategy calls for the introduction of at least 1 million improved cookstoves by 2030 and the roll-out of butane gas, and "assumes that this action will halve the amount of fuelwood extracted from the forest" (SNCC, 2019). Urgent action to implement this target is needed and is included in the NDC.

- Sustainable forest management - methodology and calculation of emissions

The average annual volume harvested between 2015 and 2020 is 41,767 m³. These statistics form the basis for calculating emissions from industrial wood harvesting.

However, the harvesting of commercial timber is only one of the sources of emissions from the industrial exploitation of wood. The other sources are :

- Construction of roads and log yards
- Destruction of biomass by skidding
- Damage caused to the residual forest stand during felling.

Annual emissions from industrial logging in Guinea range from 328 ktCO₂/year to 342 ktCO₂/year over the 201-2020 period.

Summary: The Reference Emission Level for the Forest (NERF) is estimated at 33,587 ktCO₂eq per year. Of this total, 57% is linked to deforestation, 42% to the consumption of wood energy (degradation) and 1% to the industrial exploitation of wood (forest management).

Table 7: Summary of emissions linked to the UTCAFT sector

REDD+ activity	Emissions [ktCO ₂ eq/year]
Deforestation	18 995
Degradation - wood energy	14 254
Forest management - industrial wood processing	337
NERF	33 587

b. Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, where appropriate, removals.

As part of its participation in the 21^{ème} Conference of the Parties (COP) in Paris in 2015, the Republic of Guinea presented its Nationally Determined Expected Contribution (NDEF) to the international community (*Lima Call for Climate Action §9*) and identified the priority mitigation measures to be implemented, in the energy sector, and in particular electricity production, forestry, and the extractive industries sector (*Paris Agreement, Art.4*). The Republic of Guinea's GHG emissions are very low (1 tonne of CO₂ per year per inhabitant excluding LULUCF), compared with the global average. Development therefore remains a priority in order to meet the essential needs of the Guinean population. However, given the rapid and accelerating loss of forest cover in recent years, the latest available estimates of sequestration potential suggest that the country is well on the way to becoming a net emitter of CO₂.

Thus, in order to help achieve the global objective defined in Article 2 of the Paris Agreement, it is possible for the Republic of Guinea to reconcile economic growth with a low-carbon development trajectory, and above all to avoid being "trapped" for decades by carbon-intensive infrastructures, particularly energy infrastructures. These efforts to limit the growth of GHG emissions, particularly from biomass-energy consumption, are also likely to generate co-benefits in terms of adaptation to climate change and thus contribute to the implementation of the Paris Agreement (*Art.4 - §7*). These efforts are consistent with the most recent forward-looking and planning documents: Guinea Vision 2040, National Strategy on Climate Change (SNCC, 2019), National Strategy for Sustainable Development (SNDD 2019), National Plan for Economic and Social Development (PNDES 2016-2020), National Response Plan against Climate Change (Plan National de Riposte contre le Covid-).

19. The revision of the CSN was also carried out to ensure better gender mainstreaming in the CSN, both in the sectors and actions covered, and in the coordination and monitoring arrangements.

c. Scope and coverage

The gases covered by the 2021 CDN are as follows:

Sector (IPCC nomenclature)	Covered gases
Energy	CO ₂ , CH ₄ , N ₂ O
Agriculture	CO ₂ , CH ₄ , N ₂ O
Waste & industrial processes	CO ₂ , CH ₄
UTCAFT	CO ₂

It was decided to base the reference situation for this 2021 NDC on data and projections from 3^{ème} IGES and NERF, enabling more robust ambition scenarios to be constructed. This new data will enable the commitments made in 2015 to be consolidated and strengthened.

Projections of emissions growth based on the 3^{ème} IGES were obtained using the Greenhouse Gas Abatement Cost Model (GACMO). This tool is used to calculate and monitor greenhouse gas (GHG) reductions in the following sectors: energy, waste, agriculture and industrial processes.

For the UTCAFT sector, the emissions scenarios were drawn up on the basis of NERF 2020 data.

Given its status as an LDC and the scale of its development needs, the Republic of Guinea has set relative targets for reducing greenhouse gas emissions in 2030 compared with the reference trend scenario.

The "Business-as-usual" scenario is based on the following assumptions, starting from the base year 2020, with emissions continuing to grow by 6% per year over the period 2020-2030.

Table 8: Assumptions for annual growth in GHG emissions for the BAU 2030 trend scenario

Sector	Business as usual (BAU) assumptions	Sources
Electricity generation	Growth in electricity generation : +15%/year over 2020-2030 to ensure domestic growth and industrial connection and +5%/year over 2030-2050.	CDN 2020 EIS Guinea
Transport	Conservative assumption: 100k vehicles imported per year (100k in 2017, 130k in 2018); 50% diesel and 50% petrol. No railway lines or development of urban public transport	ECOWAS standard Conakry urban transport plan
Mines	Increased production +15%/year over 2020-2030 and +5%/year over 2030-2050	
Waste	Waste + 3% year	Feasibility study for structuring the downstream waste management sector in Conakry Guinea (AFD, 2021)
Agriculture	+6% per year	3 ^{ème} IGES
UTCAFT	Deforestation of -5.3% per year over the period 2015-2020 Surface area of 3,424,543 hectares in 2020 excluding wooded savannah (NERF 2021)	NERF 2021 Biodiversity strategy 2016-2020
Wood energy	Growth in demand based on demographic growth in +2,7%	INS

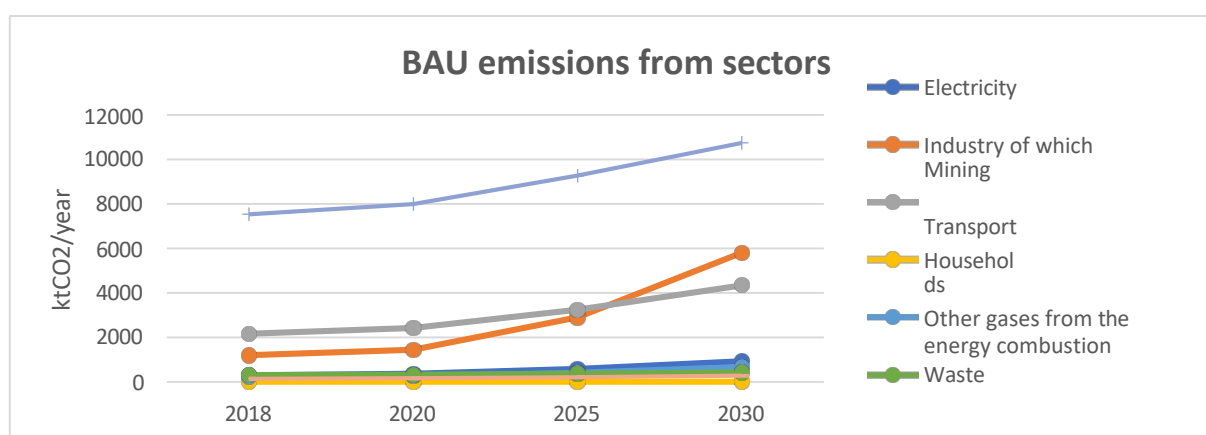


Figure 4: Growth trajectory of GHG emissions by sector in the trend scenario excluding UTCAFT

d. Strategies for implementing mitigation commitments

Objectives of the CDN

The contribution provides for a relative reduction in GHG emissions between now and 2030 in various sectors of the economy compared with projected emissions under the business-as-usual (BAU) scenario. It is made up of an unconditional contribution (CDN) and a conditional contribution (CDN+). Given the different methodologies used to establish the reference situation between the LULUCF sector and the other sectors, the commitments are treated separately.

Table 9: Projected GHG emissions by sector in 2030 according to the BAU, CDN and CDN+ scenarios (in ktCO_2eq) excluding LULUCF

Subdivision sector	BAU scenario				CDN Unconditional	CDN+ Conditional
Years	2 018	2 020	2 025	2 030	2 030	2 030
Electricity	295	357	575	926	905	693
Industry of which Mines	1 192	1 441	2 890	5 800	4 060	2 900
Transport	2 155	2 421	3 240	4 335	4 142	3 879
Households (excluding biofuels)	4	5	6	8	8	8
Other gases from combustion energy						
	217	251	398	657	590	486
Waste	298	317	367	425	392	258
Agriculture	7 537	7 996	9 271	10 748	10 748	10 748
Process manufacturers	136	153	205	274	274	274
TOTAL	11 834	12 940	16 951	23 175	21 119	19 246

The Republic of Guinea sets its unconditional target (CDN) at 2,056 $\text{ktCO}_2\text{eq/year}$, i.e. a 9.7% reduction in its emissions in 2030 compared with the trend scenario, i.e. an increase in emissions of 5% per year over the period 2020-2030. The conditional target (CDN+) is set at 3929 $\text{ktCO}_2\text{eq/year}$, or 17.0% compared with the trend scenario, i.e. a growth in emissions of 4% per year over the period 2020-2030.

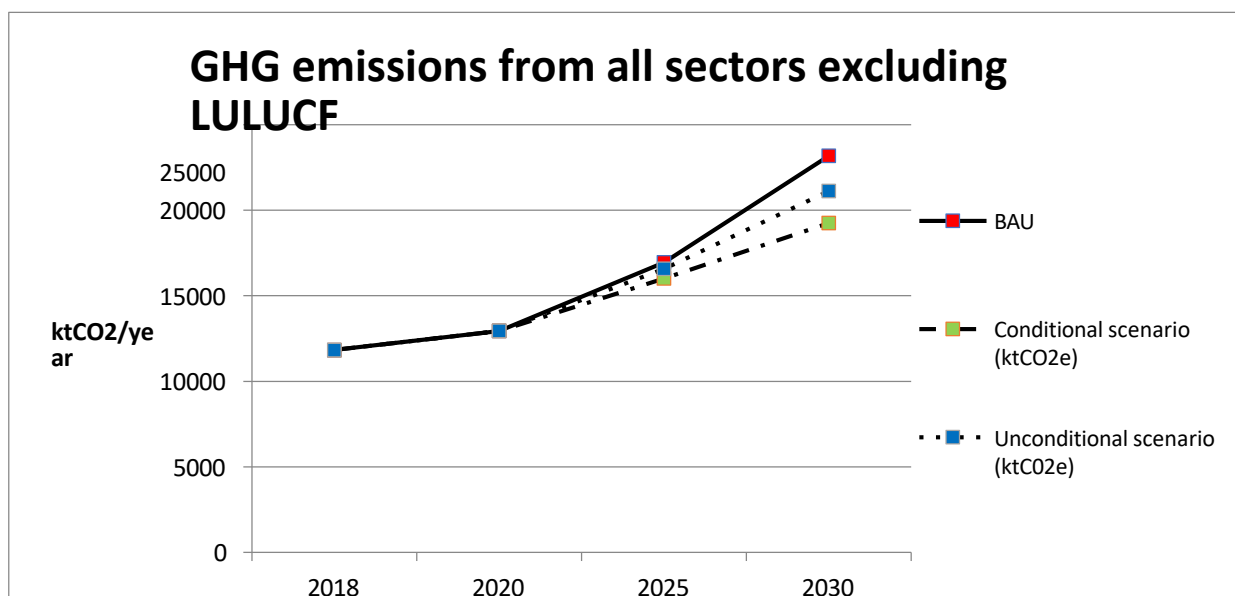


Figure 5: GHG emissions from all sectors excluding LULUCF, BAU, CDN and CDN+ scenarios

GHG emissions growth scenarios for the UTCAFT sector and mitigation measures are based on NERF 2021 baseline data and projections, the National Forest Investment Plan, the National Biodiversity Strategy 2016-2025, and sectoral policy documents on wood energy and fuel substitution.

Table 10: Deforestation rate and deforested area for the BAU, CDN and CDN+ scenarios (kt_{eq}CO₂) according to NERF 2021

Type of forest	Surface area in hectares (2020)	Percentage	Deforestation rate (2020-2030)
Clear forest	2 054 315	62%	-5%
Secondary forest	279 226	8%	-16%
Dense humid forest	785 499	24%	-2%
Mangrove forest	208 058	6%	-1%
Total surface area	3 327 097	100%	-
	BAU scenario (2030)	CDN 2030 scenario Unconditional commitments	CDN+ 2030 scenario Contingent liabilities
Deforested area in ha by 2030	1 150 950	742 058	217 111

Table 11: Projected cumulative GHG emissions by sector by 2030 according to the BAU, CDN and CDN+ scenarios (in ktCO₂eq) for the entire UTCAFT sector (deforestation, reforestation, degradation)

Emission sector	BAU scenario (2030)	CDN 2030 scenario commitments unconditional	CDN+ 2030 scenario Contingent liabilities
Deforestation by 2030 (NERF 2021)	137 025	88 345	25 408

Reforestation by 2030 (EX-ACT)	0	-4 514	-180 565
Degradation by 2030 with or without the spread of improved cookstoves	177 151	167 018	143 501
Gas butane replacing wood (GACMO)	0	-1 417	-1 417
Cumulative reduction to BAU scenario by 2030	-	-64 695	-327 138

Thus, for the UTCAFT sector, we observe :

- According to the BAU scenario (2030), a gross emission of 314,175 kteqCO_2 for the sector, broken down between deforestation and degradation;
- According to the CDN scenario, a gross emission of 255,480 ktCO_2e for deforestation and degradation, as well as a potential sequestration of 4,514 ktCO_2e for reforestation and a reduction of 1,417 ktCO_2e for butane gas, i.e. **a cumulative reduction of 64,695 ktCO_2e** ;
- According to the CDN+ scenario, a gross emission of 168,908 ktCO_2e from deforestation and degradation and a sequestration potential of 180,565 ktCO_2e from reforestation, i.e. **a cumulative reduction of 327,138 ktCO_2eq** .

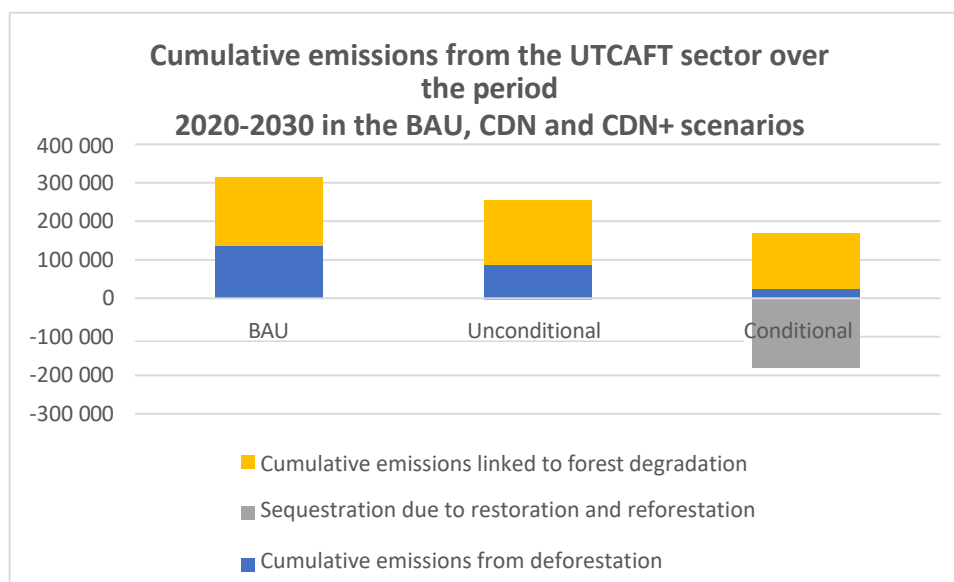


Figure 6: Cumulative emissions from the UTCAFT sector over the period 2020-2030 in the BAU (trend), CDN (unconditional) and CDN+ (conditional) scenarios

The assumptions and methodological approaches used to account for anthropogenic GHG emissions and removals comply with paragraph 31 of decision 1/CP.21 and the accounting guidelines adopted by the CMA. **However, it should be noted that**

The data available does not allow us to update the level of absorption of the UTCAFT sector and therefore the sector's net emissions.

Implementation of commitments by sector

Energy - Electricity generation	
Commitment	Make renewable energy sources a priority for electricity generation
Context and description of the commitment	<p>Hydroelectricity currently accounts for around 60% of the electricity generation mix. The commissioning of several large dams before 2025, combined with the development potential of large and small-scale hydroelectricity, solar PV and wind power, will make it possible to achieve a target of 70% by 2025 and 80% by 2030, for all economic sectors combined, including mining.</p> <p>Electricity generation grew at an average annual rate of 17% over the period 2012-2018. Thermal power stations accounted for 40% of the increase in capacity over this period.</p> <p>If this trajectory is to be pursued, the electricity generated in 2030 (13,000 GWh per year) will have to be multiplied by 6.8 compared with 2018 (1,900 GWh), driven in particular by the exponential development of the mining sector, which is connected to the grid and is a major consumer of electricity.</p> <p>This trajectory assumes that 90% of new capacity will come from renewable sources, that thermal generation will peak between 2025 and 2030 and that electricity generation yields will be 50% higher than in the baseline situation (SE4ALL).</p> <p>This commitment is in line with the goal of universal access to electricity for all households by 2030 (SE4ALL), exclusively via renewable sources.</p>
Unconditional objective	<p>Commissioning of the :</p> <ul style="list-style-type: none"> - Kaléta planned for 2021, 240 MW ; - Souapiti planned for 2021, 450 MW ; - Amaria, 300 MW, construction of which is 50% complete. - Koukoutamba (300 MW) and Fomi (90 MW), which have just come on stream. <p>65% of electricity from thermal sources by 2025 75% thermal power by 2030</p> <p>All of the above measures would represent a total of 2,000 $\text{kTCO}_2/\text{year}$ avoided in 2030 compared with the BAU scenario for <u>household electricity consumption</u>. Considerable reductions are also envisaged in the mining sector thanks to the connection to the grid of mining sites that are currently isolated, and are detailed below.</p>
Conditional objective	<p>The conditional objectives also include the dams currently under study, including :</p> <ul style="list-style-type: none"> - Bouréa (114MW), Kogbédoufrankonédou (110 MW), Poudaldé (120MW) <p>In this scenario, the aim is to achieve 80% of electricity production from hydroelectric sources by 2030.</p> <p>By 2030, this target will require the installation of around 2,500 MW of renewable generation.</p>

	<p>(all sources combined)²¹ to absorb electricity demand without increasing new thermal capacity.</p> <p>Achieving 80% of electricity production from renewable sources has an emission reduction potential of 5,074 _{ktCO₂} eq/year by 2030 for <u>household electricity consumption</u>. Considerable reductions are also envisaged in the mining sector by connecting currently isolated mining sites to the grid, as detailed below.</p> <p>In parallel with the installation of new capacity, the electricity network will be improved, with losses amounting to 42% in 2018. Reducing losses by 100 GWh in 2025 and 200 GWh in 2030 represents an additional mitigation potential of 30 _{ktCO₂} eq/year.</p>
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UTCAFT	
Domestic fuels	
Commitment	Modernising the wood energy sector and putting responses to heating needs on a renewable trajectory
Context and description of the commitment	<p>75% of the energy consumed in Guinea comes from the forest.</p> <p>It is possible to reduce average per capita consumption of fuelwood (wood and charcoal) by 50% in 2030 compared with the reference year (SE4ALL). This will make it possible to offset population growth and maintain overall consumption at around 4,400 Ktoe, thanks to :</p> <ul style="list-style-type: none"> - reducing carbonisation losses; - energy management for households and professional users; - substitution by non-renewable fuels, including butane gas; - study and observation of the bioenergy sector and its economic, technical, scientific and political framework. <p>Measures relating to wood energy will have an immediate positive impact on the status of women, as they are on the front line when it comes to supplying fuel to households and preparing meals. Reducing fuelwood consumption means either saving time on collection, or for those who buy the fuel, saving money on the part of the daily budget managed by women (which includes food, education and childcare). Reducing the time taken to collect wood also reduces exposure to the risk of violence against women. In the case of Tier 3 and 4 improved stoves, better combustion reduces exposure to toxic substances in the smoke and the incidence of respiratory illnesses for women and infants.</p>
Unconditional objective	<p>- Structuring local supply chains to manufacture and distribute 560,000 improved domestic stoves to 20% of Guinean households in operation by 2030, reducing consumption by 50% on average, with a potential reduction of 1,991 _{ktCO₂} eq/year by 2030.</p> <p>There are many other tools that can be used to reduce the pressure on forests due to wood energy consumption:</p> <ul style="list-style-type: none"> - Promotion and dissemination of efficient and improved carbonisation technologies: 5000 production units

²¹ For reference, hydroelectricity alone could meet the need, with an estimated potential of 6,230 MW (World Bank, 2019). However, part of this potential is subject to production sharing and export agreements via the OMVG and OMVS.

	<ul style="list-style-type: none"> - Structuring local supply chains to disseminate fuelwood-saving or renewable technologies in the most energy-intensive sectors (peach preservation, other post-harvest and micro-industrial processes: rice, palm oil, salt, bricks, lime, bread, etc.; catering). - Encouraging energy plantations for domestic and commercial purposes - Support for the emergence of local renewable biofuel industries (briquettes, logs, pellets, agro-waste, ethanol, solar thermal, etc.). - Substitution by biogas (domestic and commercial) <p>The Guinean government has also undertaken to replace some biofuels with butane gas through a promotion fund, a gas bottling plant and subsidies. Combined with biogas, the dissemination of this modern cooking method is targeting national capacities of 40 kToe by 2030. This represents 128k LPG stoves with a capacity of 13.1 GJ/year, and an estimated reduction potential of 257 kt CO₂/year in 2030. All of the above measures would represent a total of 2,248 kTCO₂/year avoided by 2030 compared with the BAU scenario.</p>
Conditional objective	<p>Distribution of improved stoves for wood and charcoal to 5% of the population per year, i.e. 50% over the period 2020-2030 (50% efficiency), i.e. 1.5 million functional improved stoves in 2030.</p> <p>Taken together, the above measures would represent an additional mitigation potential of 4,480 kTCO₂/year compared with the unconditional target.</p>
Forest cover and protection	
Commitment	To curb deforestation as a matter of urgency through sustainable forest management and an increase in protected areas
Context and description of the commitment	<p>Guinea has a rich and varied biodiversity heritage, with dense rainforests in the south-east, dry forests in the north, dense mesophilic forests between Boké and Mamou via Kindia, and mangrove forests in the coastal zone.</p> <p>These ecosystems are under serious threat from increasing human pressure, particularly from biomass consumption, shifting agriculture, bush fires and mining projects. Savannah ecosystems are also seeing a significant reduction in their surface area as a result of agricultural pressure.</p> <p>A recent forest inventory and a robust assessment of biomass flows would facilitate the construction of mitigation options and the evaluation of their potential: this sector presents significant opportunities for sequestration and emission reduction. Generally speaking, the establishment of a permanent, effective and regular forest monitoring system is a priority and must be developed in conjunction with the institutions and agencies in charge.</p> <p>The revised 2017 Forestry Code introduces a target for forest cover of at least 30% of the national territory.</p> <p>The country's national biodiversity strategy aims to cover 25% of the country's surface area as protected areas, i.e. an additional 1,054 km² for terrestrial ecosystems.</p> <p>The average deforestation rate over 2015-2020 was 5.3% (NERF 2021).</p>
Unconditional objective	To have an inventory of the forestry sector and its carbon stocks ²² of a complete assessment of the drivers of deforestation and emissions linked to land use change by 2025. The aim of this inventory is also to build a targeted strategy to deal with the factors of

²²This work of estimating stocks in place and potential stocks could, if necessary, use allometric super equations.

	<p>deforestation, including the end of slash-and-burn agriculture and the fight against bush fires (including those of natural origin).</p> <p>Effectively preserve the 1,882,000 hectares (SNDD, 2017) of classified forests and protected areas by strengthening control structures (Guinean Office of Parks and Reserves, nature conservationists), raising awareness, participative management, mobilising local authorities, protecting forests and systematically applying the penalties set out in the Forestry Code.</p> <p>Strengthening cooperation with neighbouring countries for the conservation and sustainable management of cross-border forest landscapes, such as the operational memorandum of understanding between Liberia and Guinea on the conservation and sustainable management of the Zياما-Wonegizi-Wologizi cross-border forest landscape (October 2019).</p> <p>Carry out reforestation programmes throughout the country, involving a minimum of 5 million trees a year (around 5,000 hectares), and manage the reforested areas sustainably.</p> <p>All of the above measures would represent a total of 4,200 kTCO₂/year avoided in 2030 compared with the BAU scenario, and a total of 53.2 MTCO₂ over the entire period.</p>
Conditional objective	<p>Reaching the deforestation peak well before 2030 by preserving forest and savannah areas through: the dissemination of climate-smart agricultural practices, as slash-and-burn agriculture remains the main cause of deforestation; the obligation to compensate for emissions from the forest and savannah sector.</p> <p>mining through projects to increase forest carbon stocks; reducing the risk of bush fires.</p> <p>Definition, implementation and operationalisation of a sustainable and effective forest monitoring system by the institutions in charge.</p> <p>Implement the international commitments to restore forests and landscapes made as part of the Bonn Challenge and the African Forest Restoration Initiative (AFR100) (2 million hectares restored)</p> <p>Additional protection of 1,054,000 hectares (National Biodiversity Strategy) Restoration of 2,000,000 hectares (Bonn challenge), i.e. 180,000 kT CO₂ stored over 10 years.</p> <p>End of deforestation in 2030: deforestation rate halved between 2020 and 2030 to 2.6%.</p> <p>Taken together, the above measures would represent an additional mitigation potential of 22,500 kTCO₂ eq/year avoided in 2030 compared with the unconditional target, and a total of 240,000 kTCO₂ eq over the entire period.</p>

Mines	
Commitment	Putting the mining sector on a net-zero emissions trajectory by 2040
Context and description of the commitment	<p>Optimising to reduce the use of fossil fuels for electricity generation, transport and industrial processes</p> <p>Industrial processes and transport also generate significant emissions. As the mining sector is vital to the country's economic development, it is being asked to reduce its carbon intensity per unit of production, to participate actively in the national contribution to the fight against GHG emissions by deploying all possible clean development solutions, and by deploying the obligation to offset mining sector emissions through mitigation and stock enhancement projects.</p>

	of forest carbon.
Unconditional objective	<p>By 2025, co-construction of a low-carbon strategy for the national mining sector, including plans for individual decarbonisation plans for 2040, including an annual carbon footprint for each operating company and carbon intensity indicators for mining production.</p> <p>The development of energy-intensive activities is conditional on the parallel development of renewable electricity capacity, which is expanding rapidly at national level, and connection to the main grid. This development of electricity capacity should enable a 10% reduction in carbon intensity per tonne of ore by 2025 and a 30% reduction by 2030, which represents the connection to the main electricity grid of around 10% of mining facilities by 2025 and 30% by 2030.</p> <p>All of the above measures would represent a total of 1,740 kTCO₂ eq/year avoided in 2030 compared with the BAU scenario.</p>
Conditional objective	<p>The support of the TFPs should help to speed up the joint development of electrical capacity for mining activities and connection to the main grid. In this scenario, the expected reduction is 20% in carbon intensity per tonne of ore by 2025 and 50% by 2030, which represents the connection to the main electricity grid of around 20% of mining facilities in 2025 and 50% in 2030.</p> <p>All of the above measures would represent a total of 1,160 kTCO₂eq/year avoided in 2030 compared with the unconditional scenario.</p>

Transport	
Commitment	Improving the efficiency of the national transport system
Context and description of the commitment	<p>The fleet of vehicles is being modernised, with a ban on imports of vehicles over 13 years old from 2021. There is still considerable scope for progress in controlling and reducing transport emissions.</p> <p>It also involves modernising and developing public and private public transport, studying and promoting experiments in sustainable mobility and developing passenger and freight rail transport. Numerous projects for rail lines to transport minerals are under study or development.</p> <p>The deployment of Conakry's Urban Development Plan, which includes a BRT bus line and a train line, is a key factor in reducing CO₂ emissions and improving living conditions for millions of people in the capital.</p>
Unconditional objective	Application of the ban on imports of vehicles over 8 years old by 2025 (ECOWAS standard) implementation by 2030 of the ban on imports of vehicles more than 5 years old (recommended by the ECOWAS Commission in 2020). That's 500,000 more efficient cars between 2025 and 2030.

	<p>Construction by 2025 of 910 km of rail line to transport ore, including 650 km for the Transguinée to replace road transport. An additional 390 km between 2025 and 2030.</p> <p>All of the above measures would represent a total of 2,300 kTCO₂/year avoided compared with the BAU scenario.</p> <p>Other unquantified measures are also important steps towards reducing the sector's emissions:</p> <ul style="list-style-type: none"> - Modernisation and rationalisation of traffic routes - Reinforcement of roadworthiness tests and vehicle fleet inventories, mobile testing facilities and dissuasive anti-pollution measures. <p>Study, test and publicise innovative sustainable mobility solutions: promote imports and encourage electric mobility, conversion to gas, biofuel (ethanol), etc.</p>
Conditional objective	<p>Application of the ban on cars over 8 years old (ECOWAS standard) from 2022, i.e. 500,000 more efficient cars by 2025 and 1,000,000 cars by 2030.</p> <p>Implementation of the integrated scenario of Conakry's PDU :</p> <ul style="list-style-type: none"> - A 33.5km Le Prince Kaloum / Sonfonya BRT line via a corniche. - A 33.5 km HRT Kaloum / Kagbelen line. <p>This work is estimated to cost €422 million between now and 2030, for a cumulative balance of -919 ktCO₂ between now and 2030.</p> <p>Taken together, the above measures would represent an additional mitigation potential of 2,600 kTCO₂eq/year compared with the unconditional target.</p>

Waste	
Commitment	Collecting and recycling urban waste
Context and description of the commitment	<p>Emissions from the waste sector amounted to 298 ktCO₂eq in 2018, with growth of 3% between now and 2030.</p> <p>Until now, solid waste has not been treated in the country, including in the largest cities, resulting in a significant loss of earnings in terms of health, the environment and the economy. However, a large-scale project is under consideration to collect Conakry's waste and convert it into electricity by burning methane.</p>
Unconditional objective	<p>30% of the objectives of the waste recovery project in Conakry :</p> <ul style="list-style-type: none"> - 740 ktonnes of waste treated by 2025, - 4148 ktonnes of waste treated by 2030 <p>This project would represent a mitigation potential of around 34 ktonnes of CO₂/year by 2030 compared with the BAU scenario.</p>
Conditional objective	<p>100% of the objectives of the waste recovery project in Conakry :</p> <ul style="list-style-type: none"> - 1740 ktonnes of waste treated by 2025 - 4,148 ktonnes of waste treated by 2030 <p>The equivalent in size of an additional project in the country's other major cities by 2030</p>

	<p>would represent around 1740 ktonnes of additional treated waste.</p> <p>Together, these projects would represent an additional mitigation potential of 130 _{kTCO₂} /year compared with the unconditional target.</p>
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e. Preparation of additional commitments for the second CDN cycle

Commitment	Context and description of the commitment	Objectives
Putting the agricultural sector on a carbon-neutral path by 2050	<p>Agriculture is a major contributor to the country's GHG emissions (62% by 2020), particularly due to livestock farming and slash-and-burn practices.</p> <p>In addition, the agricultural sector is a fast-growing priority sector for meeting the needs of the population, so emissions are likely to increase rapidly over the next decade.</p> <p>Precise data on the emissions potential of certain alternative practices in Guinea must be collected by 2025 to enable commitments to be made on the following fronts emissions and sequestration (4 by 1000 initiative) from that date. This means that research will have to assess the opportunities for carbon sequestration in the Guinean sector: agroforestry practices, sustainable soil management (mulch, crop association), etc.</p>	<p>Setting, from 2024 onwards, GHG reduction targets for the sector compared with the reference scenario and carbon sequestration targets.</p> <p>Experimenting with and identifying low-carbon alternative practices for rice growing, land management livestock residues and savannah burning.</p> <p>Modernising rural water supply by promoting modern pumping systems (electricity, solar and wind power, modern fuels) in place of human-powered pumping systems in 1,000 rural localities, and modernising agricultural and craft production systems.</p>

f. Means of implementation

Cost estimates and assumptions used (a detailed investment plan will be drawn up in 2021)

Actions	Costs	Source and assumptions
Energy		
Bringing the Souapiti, Amaria and Koukoutamba dams into service for a	USD 2 177 million	Ministry of Hydraulics

installed capacity of 1050 MW before 2025		
Bring at least an additional 2,500 MW of renewable energy on stream by 2030, guaranteeing universal access to electricity. electricity	6 to 10 billion USD	The cost of the electricity mix varies according to the production technologies (solar, hydro, biomass, wind) and their scale (solar kits and other pico- solutions, platforms, mini grids, large power plants). Source: based on IRENA
Transport		
Developing the transport of people and goods by rail: at least 650 km of Simandou - Matakang railway line	Private financing	Simandou mining development enables the "Transguinean" to see the light of day before 2030
Cost of implementation Conakry urban transport plan	USD 496 million by 2030	PDU Conakry
Waste		
Investment cost of the waste collection and recovery project in Conakry	Approximately USD 95 million	
Annual cost of waste management	USD 11 to 17 million / year (between 90 and 140 USD/tonne)	
UTCAFT		
Promotion and dissemination of efficient carbonisation technologies: at least 5,000 production units	Between USD 8 and 20 million	Need for South-South transfer of more advanced carbonisation technologies to complement the Casamance millstone Source: authors' estimates
Structuring of local supply chains to enable the distribution of improved domestic stoves to 50% of Guinean households by 2030	At least USD 10 million	International operators specialising in improved cookstoves are interested in supporting Guinea in a change of scale Source: authors' estimates
Structuring local supply chains to disseminate fuelwood-saving or renewable technologies in the most energy-intensive sectors (peach preservation, other post-harvest and micro-industrial processes: rice, palm oil, salt, bricks, lime, bread, etc.; catering).	USD 1-5 million per sector	International operators specialising in improved cookstoves are interested in supporting Guinea in a change of scale Source: authors' estimates

Encouraging energy plantations for domestic and commercial purposes	USD 20 million (over 10 years)	Energy crops and forestry are among the priorities of the Ministry of Agriculture
Support for the emergence of local renewable biofuel industries (briquettes, logs, pellets, agro-waste, ethanol, solar thermal, etc.).	To be defined by sector	Funding helps to de-risk the start-up phase and build the framework for a new bioenergy economic sector
Substitution by biogas (domestic and commercial) Support for the distribution and use of butane gas	To be defined by programme	Funding helps to de-risk the start-up phase and build the framework for a new bioenergy economic sector
Draw up an inventory of the sector and a full assessment of emissions from land use change by 2025.	USD 7 million	Estimate based on a comparison with the cost of an inventory in other countries in the zone.
Reaching the peak of deforestation well before 2030 by preserving forest and savannah areas through: promoting technologies that limit wood-energy consumption; disseminating climate-smart agricultural practices; requiring mining sector emissions to be offset by projects to increase forest carbon stocks; reducing the risk of bush fires.	USD 700 million	Estimated according to the SNDD budget Annual deforestation rate of around 1.7% over 2010-2017 (source: SNDD 2019) Forest area in 2007 (SNDD) = 13,000,000 ha Forest area in 2020 (estimate) = 10,127,000 Estimated annual deforestation rate for 2020-2030 = 0.85%.
Implement the international commitments to restore forests and landscapes made as part of the Bonn Challenge and the African Forest Restoration Initiative (AFR100) (2 million hectares restored)	USD 1 billion	Order of magnitude of USD 500 / ha Initial situation = degraded land Final situation = forest
To ensure reforestation programmes throughout the country, with a minimum of 5 million trees per year, and to manage reforested areas sustainably.	USD 140 million	Afforestation/ reforestation Total over 10 years = 1.5 50 million trees Planting density = 1,000 trees/ha (cf. ProDoc Bafing) Total surface area = 50,000 ha USD 8.4 million for 3,000 ha of cashew trees in Upper Guinea (cf. Guinea INC French)
Make the preservation of classified forests and protected areas effective through the	USD 60 million	Estimated according to the SNDD budget Classified forests = 1,182,133 ha in 2007

strengthening of control structures (Guinean Office of Parks and Reserves, nature conservationists), awareness-raising, participative management, mobilisation of local authorities, setting up defences and applying the penal sanctions provided for in the Forestry Code.		(SNDD) Applying a rate of -1.7%/year: classified forests = 920,882 ha in 2020 Deforestation rate 2020-2030 =0%.
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The commitments made under the NDC will be implemented through the PNDES, the Republic of Guinea's main planning tool, under the guidance of the Ministry of Planning and in close collaboration with the Ministry of the Environment, Water and Forests. The PNDES 2021-2025 is currently being drawn up and will reflect the ambitions set out in the NDC.

The mobilisation of resources to implement the commitments of the NDC will require a diversity of sources of public funding (national budget, bilateral and multilateral public climate funding) but also private funding, given the economic sectors targeted by the NDC (mining, energy, forestry). The private sector's commitment to financing and investing in the fight against climate change therefore needs to be strengthened.

The Republic of Guinea is already well organised and equipped in terms of mobilising the private sector through the actions of its Ministry in charge of investments and Public-Private Partnerships²³ ; several opportunity sectors mentioned by the Ministry are closely linked to actions integrated into the NDC (energy & water, agriculture, weather infrastructure, etc.). Strengthening this commitment from the private sector is based on: (i) defining a detailed investment plan presenting the investment opportunities generated by the implementation of the NDC, making sure that these opportunities are consistent with those already put forward by the government; (ii) raising the awareness of the private sector so that it becomes more involved in the fight against climate change by means of incentives (more favourable terms for the private sector in public-private partnerships when they undertake to respect the national principles guiding the fight against climate change), sectoral meetings between peers so as to exchange technical itineraries and innovations in favour of the climate in Guinea, and the strict application of the sanctions provided for by the law (Mining Code, Forestry Code, Water Code, etc.).

In addition, the decentralisation process has made significant progress since 2017, making local authorities key players in sustainable development: The revision of the Local Authorities Code, the establishment of the National Agency for the Financing of Local Authorities (ANAFIC), under the supervision of the Ministry of Territorial Administration and Decentralisation, responsible for managing the newly created National Local Development Fund (FNDL), replenished by a tax on the quantities of minerals produced and exported, the establishment of local executives in the country's 342 local authorities following the local elections in February 2018. At a time when a new phase of planning at the municipal level is getting underway (2nd generation local development plans), the vertical integration of climate issues into local planning and budgeting exercises could enable a more systematic orientation towards climate-compatible investments and the implementation of local development plans.

²³<https://www.invest.gov.gn/page/secteurs-d-opportunites?onglet=presentation>

implementation of the NDC commitments at local level, making local authorities contributors to adaptation and mitigation commitments²⁴ .

Despite relatively dynamic growth, the Republic of Guinea requires the financial and technical support of the developed country Parties to the Paris Agreement to mobilise additional resources to finance the climate action provided for in Article 9 of the Paris Agreement. Guinea's public debt stood at 43.4% of GDP at the end of 2020, and is expected to stabilise at around 44% over the next five years²⁵ . The international financial institutions consider the risk of over-indebtedness to be moderate. Guinea is relying on borrowing on preferential (concessional) terms, as the capacity for additional debt remains low despite this growth and the structural reforms undertaken to increase the country's own budgetary resources. In this context, the Republic of Guinea is making part of its contribution (CDN+) to the package conditional on the mobilisation of financing resources that can be accounted for under the Convention's Financial Mechanism.

g. Intention to use voluntary cooperation under Article 6 of the Paris Agreement

Guinea considers that the Parties to the Paris Agreement must strengthen their voluntary and concerted cooperation to raise the level of ambition of their mitigation and adaptation measures while seeking to reduce the total costs of achieving the overall objectives of the Paris Agreement (article 2).

Guinea wishes to express its interest and intention to voluntarily engage in cooperative approaches under Article 6 of the Paris Agreement, to finance its contribution to mitigation efforts, which is conditional on obtaining international financial support, while providing a complementary response to its development needs to move towards the Sustainable Development Goals (SDGs).

Guinea wishes to prepare itself as soon as possible to be able to participate actively in cooperative approaches, in particular in the context of the market-based mechanism for sustainable development of Article 6.4 but also of non-market-based approaches which are provided for in Article 6.8, to assist it in the implementation of its NDC by seeking synergies between its mitigation and adaptation measures, in the context of sustainable development and poverty eradication.

In particular, Guinea wishes to engage in these cooperative approaches to develop the production of electricity from renewable energy sources, in particular small-scale hydroelectricity, solar photovoltaic and wind power, as well as the deployment of improved stoves to 50% (conditional target) of Guinean households to significantly reduce the pressure on forest resources and the resulting loss of remarkable biodiversity.

²⁴ Transfers from the national budget to local authorities will account for 3.4% of the total budget in 2021 (Finance Act).

²⁵ Average ECOWAS Member States 2019: 56% of GDP

h. To what extent does the Party consider its NDC to be fair and ambitious in the light of its national situation?

In order to improve the living conditions of its population and, more generally, to raise the country's level of development, the Republic of Guinea is pursuing economic growth objectives. This dynamic of increasing the overall level of production and consumption of goods and services often leads to a logical increase in GHG emissions per person, as has been observed in similar situations in the past. However, the Republic of Guinea intends to follow the gradual decorrelation between economic growth and GHG emissions observed worldwide since 1990. It aims to stabilise per capita GHG emissions (excluding LULUCF) at 1.2 tCO₂ by 2030, compared with 1.4 tCO₂ in the trend scenario. This commitment reflects a reduction in the carbon intensity of Guinean GDP, particularly in the mining sector.

The Republic of Guinea's future economic growth must therefore be framed by major commitments to the climate, the investment cost of which is significant. In this respect, the role of the international community, through the orientation of climate financing, is essential. However, despite the fact that the Republic of Guinea is highly vulnerable to the consequences of climate change, particularly in terms of strategic resources for the ECOWAS-CILSS zone (water, forests, etc.), it is one of the three countries that have received the least multilateral climate funding, with around USD 35 million between 2003 and 2019.

IV. Commitments to adapt

a. Climate change impacts and vulnerabilities in the Republic of Guinea

In 2015, through its NDC, the Republic of Guinea presented to the international community the massive efforts that would have to be made by the country to cope with the negative impacts of climate change, and to assume its responsibilities with regard to the vulnerability of the West African sub-region (*Paris Agreement, Art.7*). The new work carried out since 2015²⁶ and the indicators available internationally²⁷ confirm the particular vulnerability of several areas of Guinean society: agriculture-livestock farming, water resources, the coastal zone and the forestry sector. Furthermore, as already highlighted in the National Adaptation Programme of Action (NAPA, 2007), the effects of climate change affect the population unequally. The poor, those living in rural areas and those whose livelihoods depend mainly on the exploitation of natural resources are the most vulnerable. According to data from the World Bank's portal, the CMIP 5 model developed by the IPCC (Intergovernmental Panel on Climate Change) is expected to show the following:

- A general rise in average temperatures. According to various emission scenarios in the IPCC's 5^e report, temperatures will rise by between 1.1 and 3 degrees by 2060, and between 1.6 and 5.3 degrees by 2090, with a more pronounced increase by 2050.

²⁶ Second National Communication and National Climate Change Strategy

²⁷ Climate Change Knowledge Portal - World Bank Group
Notre Dame global Adaptation Initiative (ND-GAIN)

in the north of the country. Hot spells will be more intense in the north-east of the country, regardless of the emissions scenario.

- An increase in rainfall during the rainy season according to several CMIP5 models, albeit with significant intra-seasonal variability. A late start to the rainy season is also expected.
- Rising sea levels (of the order of 80 cm by 2100).

Pending the results of the national work currently underway to refine climate projections on the basis of the most effective climate models, this NDC undertakes to undertake "no-regrets" adaptation actions²⁸, i.e. actions that will have the effect of increasing the overall well-being of the population, regardless of the uncertainties linked to the climate projections currently available (*Lima Call for Climate Action §12 and Paris Agreement Art. 2.1.b*).

In addition to the implementation of several projects contributing to the adaptation of the territory, the efforts made by the Republic of Guinea since 2015 to implement its adaptation commitments are also tangible and made sustainable through :

- The revision of the Environmental Code in 2019: incorporates three major points, namely i) the inclusion of provisions on climate change, renewable energies and energy efficiency (Title 6), ii) the creation of the Environment and Natural Capital Fund (Title 7) and iii) proposals to raise the level of penalties.
- The revision of the Forestry Code in 2017: sets a target for forest cover of at least 30% of the national territory, extends the definition of the forest estate (including trees outside forests) and introduces new, more restrictive provisions on logging and reforestation.
- Development of the National Water Policy (2018): aims to develop an integrated approach to water resources throughout the country and includes climate issues across the board.

b. Framework documents for adaptation in the Republic of Guinea

The National Adaptation Plan, which is currently being drawn up, will constitute the Republic of Guinea's adaptation communication document, taking into account the guidelines established in Decision 5/CP.17. However, while awaiting this document, the Republic of Guinea has decided to communicate information in its 1st NDC that is consistent with Decision 9/CMA.1, so as to demonstrate Guinea's priority in combating the impacts of climate change, to strengthen the international community's support for the most urgent adaptation measures and to contribute to the global assessment, in particular to evaluate the achievement of the global adaptation objective (Article 7 - Paris Agreement).

The biennial transparency reports will be the main communications on monitoring the implementation of Guinea's adaptation measures.

²⁸ The actions to be implemented to lead the region towards resilience must meet various criteria. They must be flexible and adaptable to the production of new knowledge on climate projections, they must not conflict with the principle of climate change mitigation and they must offer benefits for the region, whatever the future situation and whatever the level of uncertainty linked to climate projections. These are known as no-regrets measures: they offer benefits even if the impact of climate change is less than anticipated.

c. The adaptation plan and measuring its impact

Preliminary remarks			Impact indicators
<p><i>A framework detailing the monitoring and results indicators for the actions, as well as the reference situations and targets, has been created and will be included in the Republic of Guinea's transparency report. This table only mentions impact indicators, which measure the long-term effect of adaptation measures. 3 general indicators are proposed, as well as specific indicators for each commitment. Indicators that are already available on a gender-disaggregated basis using national or international data are marked with an asterisk (*).</i></p>			<p>Gini index</p> <p>Synthetic index of 11 adaptability indicators proposed by ^{UNEP29}</p> <p>Share of national cereal food requirements met by national production</p>
Commitment 1	Justification	Actions	Impact indicators
<p>Drawing up and implementing the National Water Policy (NWP) action plan</p>	<p>The Republic of Guinea is considered to be the "water tower of West Africa". Four basins of vital importance to the sub-region, particularly because of the potential they hold in terms of economic development and maintaining biodiversity, have their source in Guinea.</p> <p>According to the latest national estimates, as a result of climate change, river flows could be reduced by more than 50% of the current daily average by 2100. These estimates need to be revised in the light of the current state of science, which is particularly uncertain about rainfall projections.</p> <p>However, water resources are likely to face three main threats in any case: i) the combination of strong demographic growth, which is increasing pressure on resources; ii) the development of economic activities that have a direct qualitative and quantitative impact (mining and hydraulic infrastructures); iii) the development of new technologies, which are likely to have a significant impact on water resources.</p> <p>iii) the degradation of riparian vegetation and the heads of springs, leading to a reduction in flow.</p> <p>A strategy known as "with no regrets", i.e. one that increases the</p>	<p>Preservation and restoration of riparian zones at the headwaters of springs, riverbanks and riverbeds, particularly on cross-border rivers, notably through the development of IWRM action plans.</p>	<p>Guinea's contribution to the flow of the Senegal and Niger rivers</p> <p>Proportion of the national population potentially below the water stress threshold</p>
		<p>Seeking alternatives to financing activities to preserve degraded cross-border river basins, as a result of uses and withdrawals, and the degradation of water quality (brick factories, dredging of riverbeds in search of minerals).</p>	
		<p>Integration of the climate change dimension into all institutional and legal frameworks and basin organisations in charge of climate change. managing and developing the</p>	

²⁹The adaptation gap - health report - UNEP, 2018

	<p>people's well-being regardless of climate projections.</p> <p>At international level, given Guinea's strategic position upstream of the main West African river basins, water resource management choices will inevitably have an impact downstream, beyond Guinea's borders. These international implications make it all the more important for Guinea to take responsibility for the sound management of its resources in the current context of climate change. The Republic of Guinea now has the necessary arsenal to implement a coherent policy, notably through its National Water Policy (2018). The country's weakness lies in the lack of coordination between stakeholders and of the funding that would enable it to apply the targeted objectives, hence the need for an IWRM-based NWP Action Plan.</p> <p>As far as gender is concerned, the availability of water resources has a major impact on the role of women in the household. Traditionally in charge of fetching water, they are the first to suffer from a drying up of resources, through a loss of time and energy that limits their economic and social autonomy. In this respect, measuring the proportion of women who have access to a source of drinking water and sanitation facilities, as provided for in the country's detailed commitments, provides information on changes in their conditions.</p>	cross-border catchment areas	
		Strengthening the hydro-ecological monitoring system for international rivers.	
		Access to a clean and hygienic living environment	
		Improve the assessment of the impacts of CC and economic activities on surface water (river flow) and promote studies on the economic values of protected areas and ecosystem services.	
Commitment 2	Justification	Ensure universal and equitable access to drinking water for the population.	Impact indicators
Put in place the measures needed to protect, conserve and manage ecosystems, revitalise economic activities and strengthen the resilience of local communities.	The coastal zone is a strategic area in the Republic of Guinea. It is the country's main economic zone and is home to around 38% of the population. It also plays a fundamental role in the agricultural and energy sectors. It accounts for 24% of the country's rice production. Lower Guinea has a potential agricultural land area of 1.3 million hectares.	<p>Drawing up an integrated coastal zone management plan (ICZM)</p> <p>Drafting of the law on the coastline</p> <p>Establishment of a Marine Spatial Planning (MSP) system and a</p>	<p>Incidence of poverty in the regions of lower Guinea (Boké and Kindia) compared with national results*.</p> <p>Proportion of agricultural land</p>

populations in its coastal zone	<p>hectares, of which 380,000 ha are cultivated each year. Various cereal, fruit, vegetable and tuber crops are grown in the mangrove hinterland. Of the initial 385,000 ha of mangroves, more than 140,000 ha have been converted to rice fields. The latter also provides 60% of the domestic energy for the capital and the main coastal towns.</p> <p>The coastal zone is particularly vulnerable to climate change, due to rising sea levels and increased coastal erosion, with impacts on fisheries resources, the destruction of infrastructure in coastal towns and villages, and the disappearance or salinisation of rice-growing plains.</p> <p>All these factors mean that the area is under considerable pressure from the economic activities that are taking place there, from the anarchic urbanisation that is taking place because of the lack of a coastal code and respect for the land code, and from the impact of climate change.</p> <p>Traditionally in charge of domestic tasks related to firewood, women are the first victims of the degradation of the coastal zone and its resources. What's more, they are more vulnerable to the hazards of climate change because their resources are fewer and more volatile, which limits their ability to adapt.</p> <p>In this respect, the distribution of improved ovens and stoves provided for in the country's detailed commitments is particularly aimed at women.</p>	Blue Economy Strategy	<p>lost to marine submersion</p> <p>Proportion of fish stock at biologically viable levels (not overexploited).</p>
		Update of the mangrove development master plan (SDAM).	
		Reducing the sources of mangrove degradation.	
		Integrating adaptation into LDPs and tools land-use planning for coastal municipalities.	
		Improving scientific knowledge of the entire coastline.	
		Developing rice production by improving yields through the use of varieties that are better adapted to the impacts of climate change (particularly salt water intrusion).	
Commitment 3	Justification	Extension of the pilot initiatives already launched, in particular the project on Strengthening Resilience and Adaptation to the Negative Impacts of Climate Change in Vulnerable Coastal Zones of Guinea. (RAZC) to all coastal municipalities.	Impact indicator
		Assessment of the impact of CC on coastal infrastructures (ports, roads, etc.).	

Supporting rural communities in their efforts to adapt and develop agro-silvo-pastoral techniques that enable them to continue their activities while preserving the resources on which they rely.	<p>Food security is not currently guaranteed in the Republic of Guinea. The priority is therefore to increase production, despite the possible negative impact of climate change on agricultural yields.</p> <p>As well as ensuring that the population's primary needs are met, taking action on agricultural practices makes it possible to rationalise the management of land and water resources, which represent a considerable potential for reducing greenhouse gas emissions.</p> <p>Women living in rural areas are also particularly vulnerable because of their specific role in agriculture. Their access to inputs, technical advice, improved technologies, land ownership and decision-making processes is limited compared to that of men, thus limiting their resilience in the face of climatic hazards. In this respect, the country's detailed commitments to achieving parity in agropastoral conflict management committees are aimed at strengthening the role of women.</p>	Development of agro-ecological fish farming.	Incidence of rural poverty* (%)
		Diversification and deployment of low-input cultivation techniques adapted to a less rainy climate.	Incidence of food insecurity (CARI indicator)*
		Controlled irrigation.	Growth rate of agricultural value added (constant 2010 USD)
		Integrating the climate change dimension into local planning (PDL and PAI)	Yields of main strategic crops
		Development of techniques for preserving and processing agro-silvicultural products.	Proportion of total land area occupied by degraded land
		Better management of agro-pastoralism, particularly transnational, through the construction of pastoral facilities, so as to limit the degradation of pastures and soils and reduce the risk of conflicts of use.	Proportion of farmland destroyed by natural disasters

d. Adaptation measures with mitigation co-benefits in accordance with §7 of Article 4 of the Paris Agreement

How the economic and social consequences of the response measures were taken into account in drawing up the NDC;

As previously stated, the climate projections for the Republic of Guinea need to be updated by the Direction Nationale de la Météorologie in the light of the most recent climate modelling science. In order to be consistent with future national reference documents such as the National Adaptation Plan and the Third National Communication, the adaptation component of this NDC is part of a "no regrets" approach. Thus, the adaptation measures envisaged today have been designed to increase the well-being of the population whatever happens, regardless of the uncertainties linked to climate projections.

currently available, particularly with regard to changes in rainfall patterns. The economic and social consequences of the measures have therefore been placed at the heart of the proposed adaptation measures.

Specific projects, measures and activities to be implemented to contribute to mitigation co-benefits, including information on adaptation plans that also produce mitigation co-benefits

Firstly, the adaptation measures included in the NDC emphasise a key concept: the polluter pays principle. Although this principle is enshrined in the Republic of Guinea's legislation (the Environment, Forestry, Water and Mining Codes), it is difficult to apply. Reinforcing its implementation would have a twofold benefit in terms of mitigation, namely constraining the biggest GHG emitters and thus limiting their emissions, and providing an additional source of revenue for legislators to set up virtuous projects. Secondly, the objective of restoring and preserving the headwaters, banks and beds of watercourses is also a source of co-benefits in terms of mitigation.

e. Assessment of financing requirements for adaptation commitments

The costs of climate inaction include all the socio-economic losses induced by the effects of climate change, in the event that nothing had been done to mitigate and adapt to it. In other words, the cost of climate inaction represents the maximum level of damage potentially borne by a society as a result of climate change. Recent work by the *World Wildlife Fund* (WWF)³⁰ measures this cost in terms of the potential loss of 6 ecosystem services as a result of climate change. In the case of Guinea, the total cost of climate inaction using this approach is between USD 1.91 billion and USD 4.37 billion, depending on the theoretical choices made regarding the discount rate³¹, by 2050.

It should be noted that this approach is one way of getting to grips with the issue and making international comparisons, but it is still indicative³².

For the purposes of the NDC, the cost of adaptation is measured using 2 complementary approaches, namely (i) an aggregated assessment at national level, based on the methods used for global assessments, and (ii) a pragmatic estimate of all the measures envisaged in the revision:

- The macroeconomic estimate is in line with the methods developed in the reports of the international institutions³³, and corresponds to a "Bottom up" approach. Based on existing literature, the recent work of Chapagain et al (2020) proposes a model that establishes a causal relationship between climate data (temperature rise), socio-economic data (GDP per capita) and the cost of adaptation. Applying this method to the Republic of Guinea, the country will face adaptation costs of

³⁰*Global Futures: Assessing the global economic impacts of environmental change to support policy-making* - WWF, 2020

³¹We vary it here from 0.1% to 3%.

³²The WWF is due to update its work in the near future and pursue research to make it more applicable.

³³*The adaptation Finance Gap Report* - UNEP, 2016

The economics of adaptation to climate change - World Bank, 2010

between USD 713 million and USD 1,922 million by 2030, depending on climate projections and the discount rate¹⁶. The lowest value corresponds to the RCP4.5 scenario with a high discount rate, while the highest corresponds to the RCP8.5 scenario with a low discount rate.

- The estimate per adaptation measure included in the NDC indicates that costs should amount to USD1 billion by 2030. The consultants used feedback from projects already implemented or planned in the Republic of Guinea to determine prospective costs in line with the targets set out in this revised NDC. The details of these targets and the monitoring indicators are set out in a separate document that will be included in the first transparency report (2024).

The Republic of Guinea will therefore face colossal costs in meeting the challenge of adapting to climate change. However, given the potential costs of inaction and the scale of climate change, to which the country is making a very marginal contribution, investing in adaptation measures is essential and rational.