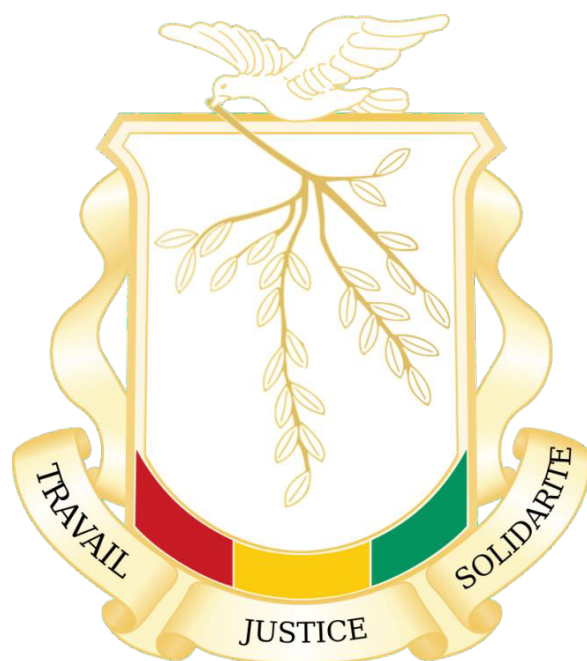


Assessed Contribution at the National Council (CDN) of the Republic of Guinea

2021



July 2021

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Acronyms

AP	Paris Agreement	LPDSE	Development Policy Letter Energy Sector
CROSSBEAM	Business As Usual	MEEF	Ministry of the Environment, Water and Forests
BMD	Multilateral Development Bank	OECD	Organisation for Co-operation and Cooperation Economic Development
BSD	Office of Strategy and Development	ODD	Sustainable Development Goal
UNFCCC	United Nations Framework Convention on Climate Change	PAI	Annual Investment Program
MTEF	Medium-Term Expenditure Framework	PANA	National Adaptation Action Plan
CDN	Nationally Determined Contribution	PDL	Local Development Plan
ECOWAS	Economic Community of States West Africa	GDP	Gross domestic product
CEES	Economic, Environmental and Social	LDC	Least Developed Countries
CNSC	National Climate Change Committee	PNA	National Adaptation Plan
CNI	Initial National Communication	NCCP	National Platform for Consultation on Climate Change
COP	Conference of the Parties	PNDES	National Development Plan Economic and Social
INDCs	Intended Nationally Determined Contribution	SOPs	National Environmental Policy
CS-CDN	Determined Contribution Monitoring Committee at the national level	UNDP	United Nations Development Programme
DNPNC	National Directorate for Pollution and Nuisances and Climate Change	PV	Photovoltaic
EBT	Technology Needs Assessment	RGPH	General Population and Housing Census
ELEP	Light Survey for the Evaluation of Poverty	SNA	Second National Communication
FAO	United Nations Organization for Food and agriculture	SDAM	Mangrove Management Master Plan
IMF	International Monetary Fund	SE4ALL	<i>Sustainable Energy for All</i>
FNPG	National Fund for the Promotion of Gender	SIE	Energy Information System
FONAEF	National Fund for the Support of Activities Women's Economics	SIGPIP	Integrated Facility Management System Public Investment Program
GHG	Greenhouse Gases	DCS	National Strategy on Change Climatic
IWRM	Integrated Water Resources Management	NSDS	National Development Strategy Durable
ICZM	Integrated Coastal Zone Management	TCN	Third National Communication
IGES	Greenhouse Gas Inventory	EU	European Union
		UNEP	United Nations Environment Programme
		LULUCF	Land Use, Land Use Change and Forestry
		WWF	World Wildlife Fund

I. Executive Summary

Elements of understanding of the NDC 2021	
Changes in the NDC compared to 2015	<p>The Republic of Guinea has made efforts to improve the compliance of the section mitigating its updated NDC with the provisions of the Paris Agreement and the Rulebook (Decision 4/CMA/2018/3/Add.1). In particular, the following are specified:</p> <ul style="list-style-type: none"> • Quantifiable information on the baseline(s) of the target(s), including a base year. • Implementation schedules and/or periods, scope and scope, planning processes. • The assumptions and methodological approaches used, including to estimate and account for GHG emissions. • Explanations of how the NDC is equitable and ambitious, and how it contributes to the 2°C goal. • Better documentation of the data used to establish the baseline GHG emissions situation and the assumptions used to construct the scenarios. • Definition of sectoral indicators and numerical targets for the whole commitments made.
Purpose of the document	<p>Revision of the 2015 NDC in line with the provisions of the Paris Agreement and integrating cross-cutting gender/SDG issues.</p> <p>Updating of the baseline situation with data from the 3rd IGES and a study on the baseline of forest sector emissions.</p> <p>Review of unconditional and conditional mitigation targets; inclusion objectives for the LULUCF 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>: 7%³</p> <p><u>Agricultural sector's share of GDP</u> : 24.26%⁴</p> <p><u>Incidence of poverty</u> : 43.7% in 2019⁵</p> <p><u>Objective</u>: Move from "Least Developed Countries" to "Emerging Countries" by 2040</p> <p><u>Climate</u> : humid tropical, alternating dry and rainy seasons of unequal duration.</p> <p>Average rainfall: 1988 mm per year</p> <p><u>Guinea's share of overall GHG emissions</u> : <0.1%⁶</p> <p><u>GHG emissions per capita</u> (excluding LULUCF): 1 tCO₂eq (2020)</p>
Conditions of implementation	<p>Implementation of sectoral measures through the National Economic and Social Development Plan (PNDES 2021-2025 currently being developed). Steering of the implementation by the Ministry of Planning and the Ministry of the Environment, Water and Forests, on the orientations of the National Climate Change Committee and in coordination with the Institutional Monitoring and Evaluation Mechanism of the PNDES</p> <p>Operational monitoring of implementation and evaluation of progress in compliance with the provisions of the transparency framework by the National Directorate</p> <p>Pollution, Nuisances 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 Harmonized Survey on Household Living Conditions in Guinea (EHCVM), 2019

⁶ World Resources Institute, 2017 CAIT data

	National Agency for Climate, 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 Environmental Policy (NEP Edition 2016) National Strategy for Sustainable Development (SNDD-2019) National Strategy on Climate Change (SNCC-2019) National Water Policy (2018) Environmental, Water, Livestock, Forestry and Mining Codes</p> <p>Initial National Communication (CNI-2002) National Adaptation Action Plan (NAPA 2007) Intended Nationally Determined Contribution (INDC-2015) 3rd Greenhouse Gas Inventory (2021) Technology Needs Assessment (EBT-2019)</p>
Mitigation Component	
Base year	2020, based on updated and projected data from the 3rd gas inventory in greenhouse effect (reference year 2018)
Commitment period	2020-2030
GHGs taken into account	CO ₂ , CH ₄ , N ₂ O
Emission sectors covered	Energy, Industrial Processes, Agriculture, Land Use, Land Use Change and Forestry, Transport, Waste
Type of Objectives	Deviation from a current practice (BAU) for each of the sectors concerned. Unconditional reduction in emissions compared to a BAU scenario and following the base year. Conditional reduction of emissions relative to a BAU scenario and following the base year.

Sectoral objectives	<p><u>Energy (electricity production):</u></p> <ul style="list-style-type: none"> - Unconditional: - 2000 ktCO₂/year compared to BAU - Conditional: - 5,104 ktCO₂ compared to 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 to the unconditional scenario <p><u>Mines:</u></p> <ul style="list-style-type: none"> - Unconditional: - 1,740 ktCO₂/year compared to BAU - Conditional: - 1,160 ktCO₂/year compared to the unconditional scenario <p><u>Rubbish:</u></p> <ul style="list-style-type: none"> - Unconditional: -34 ktCO₂/year compared to BAU - Conditional: - 130 ktCO₂/year compared to the unconditional scenario <p><u>LULUCFT:</u></p> <p><u>Biofuels:</u></p> <ul style="list-style-type: none"> - Unconditional: - 2248 ktCO₂/year compared to BAU - Conditional: - 4480ktCO₂ compared to the unconditional scenario <p><u>Deforestation:</u></p> <ul style="list-style-type: none"> - Unconditional: - 4200 ktCO₂/year compared to BAU - Conditional: - 22500 ktCO₂/year compared to the unconditional scenario <p><u>Restoration:</u></p> <ul style="list-style-type: none"> - Unconditional: 451 ktCO₂/year sequestered compared to BAU - Conditional: - 17,605 ktCO₂/year sequestered compared to the unconditional scenario
Estimated level of mitigation	<p>Excluding LULUCFT, the Republic of Guinea sets its unconditional objective (NDC) at 2,056 ktCO₂eq/year, i.e. a 9.7% reduction in its emissions in 2030 compared to the trend scenario, i.e. an increase in emissions of 5% per year over the period 2020-2030. The conditional target (CDN+) is 3929 ktCO₂ eq/year, i.e. 17.0% compared to the trend scenario, i.e. a growth in emissions of 4% per year over the period 2020-2030.</p> <p>On LULUCFT, excluding reforestation actions (removals not taken into account), the Republic of Guinea sets its unconditional objective (NDC) at a 20% reduction in its gross emissions in 2030 compared to the trend scenario. The conditional target (CDN+) is 49% compared to the trend scenario.</p>
Costs of implementing commitments	<p>At least USD 13.8 billion</p> <p>The Republic of Guinea conditions part of its contribution (CDN+) to the mobilization of financing resources that can be accounted for under the Convention's Financial Mechanism.</p>
Adaptation Component	
Manifestations of climate change (horizon 2030)	<p>Rising average temperatures</p> <p>Trend towards a slight increase in average annual rainfall but marked by increased interannual and intra-annual variability.</p> <p>Sea level rise and coastline retreat</p>
Areas covered	Water resources / Coastal zone and blue economy / Agriculture, livestock and Forestry sector
Cost Estimate adaptation	<p><i>Macroeconomic Estimate</i> : [713-1922] million USD</p> <p><i>Estimated measures included in the NDC</i> : USD 1 billion</p>
intention	The actions undertaken are said to be "without regrets"

Framework documents for communication adaptation	National Communications and from 2023, the National Adaptation Plan Transparency Reports
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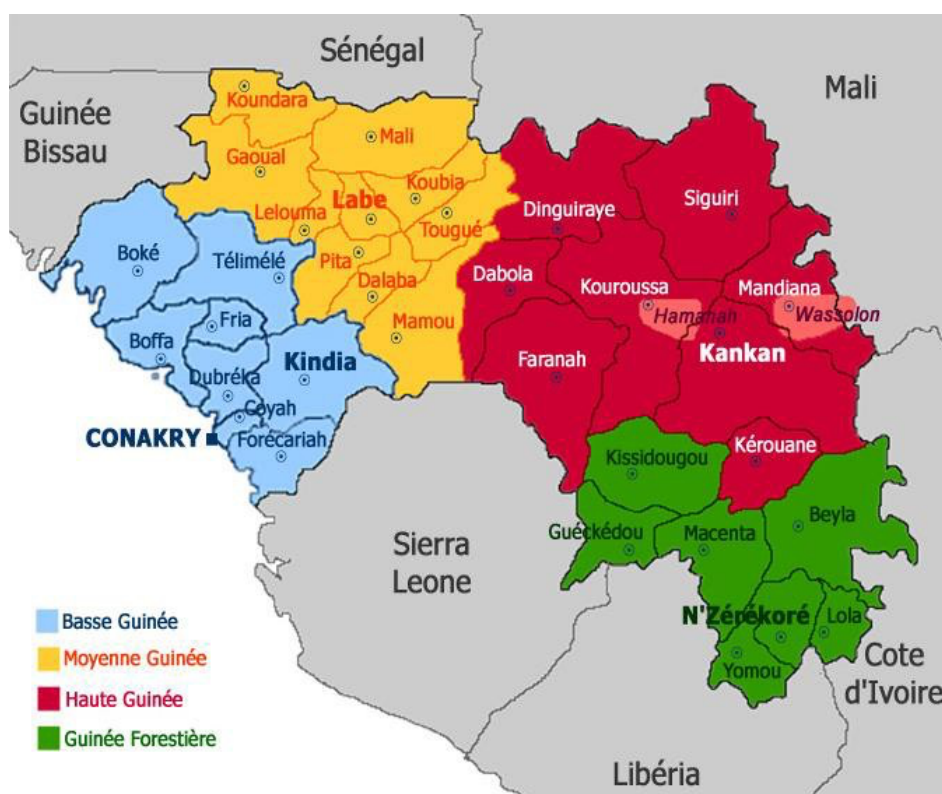
II. Revision of the NDC of the Republic of Guinea

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. Since then, it has developed strategies to combat climate change, including its Initial National Communication (INC), based on a greenhouse gas inventory (GHI) in 2001 (based on 1994 emissions), and its Second National Communication (SNA) (based on 2000 emissions). Finally, the Republic of Guinea developed its National Action Plan for Adaptation to Climate Change (NAPAs) in 2007 and initiated several projects to implement this plan. It is also currently engaged in the process of developing its Third National Communication (NCT) and National Adaptation Plan (NAP), which are expected to be completed in 2023 and 2024 respectively. As part of the work on the NCT, a 3rd IGES was developed in the first half of 2021 and constitutes the basis of the baseline data for the revision of the NDC.

Five years after its adoption in Paris at the COP21 of the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement (PA) on climate change became effective in 2020. While science regularly demonstrates the extent of the efforts required at the global level to meet the collective commitment, the Republic of Guinea, after ratifying 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



With an area of 245,857 km², the Republic

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Guinea has a population of about twelve million inhabitants, i.e. a density of 48 inhabitants per km². It is characterized by four major areas

eco-
Lower Guinea, Middle Guinea, the Upper Guinea and Forest Guinea.

Its hydrographic network is very dense 1166

Rivers divided into 23 watersheds, 14 of which are international. It enjoys a humid tropical climate characterized by the alternation of two 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; a national average of 1988 mm of precipitation falls per year, with very large differences depending on latitude, topography and continentality (4000 mm in Conakry, 930 mm in Koundara)⁷. From an administrative point of view, the country is subdivided into 7 regions (Boké, Kindia, Mamou, Faranah, Kankan, Labé, Nzérékoré) and a Governorate (Conakry), 33 Urban Communes and 304 Rural Development Communities.

With one of the lowest HDIs in the world (178th 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, while its population growth is 2.7% per year (INS 2019) and the number of inhabitants is expected to reach 16 million in 2030 (RGPH 2014).

Table 1: Demographics

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

Population growth rate	2,7 % (2019)	INS	2,57
Density	51 km² (2018)	BEEMER	99,6
Human Development Index (and rank)	0,477 (178)	UNDP (2019)	0,506
GINI coefficient on inequality of income	33,7 (2012)	BEEMER	39,7
Share 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)	BEEMER	61,3
Man	60.5 years (2019)		59,8
Wife	61.6 years (2019)		62,7

Through its forward-looking strategic vision document " *Guinea 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 industrialization for the processing of agricultural and mining products. The Republic of Guinea has significant economic potential in the agriculture, fisheries, mining and hydroelectric sectors. Guinea has more than a third of the world's bauxite reserves (40 billion tonnes of bauxite above 40%) and significant gold reserves (more than 700 tonnes)⁹. In addition, the Republic of Guinea holds the largest unexploited iron deposits in the world (20 billion tons), with a first-class ore (grade greater than 60%); and proven diamond reserves estimated at more than 30,000,000 carats, with probable reserves being more than 500,000,000 carats. This potential is, for the time being, only poorly exploited and GDP growth amounted to 6% in 2019. In the same year, the industrial and agricultural sectors accounted for 24% and 20% of the value of GDP respectively.

Despite the double health crisis of 2020 (Ebola and Covid-19), Guinea experienced economic growth of 7% in 2020, according to recent IMF data, driven by the results obtained by the mining sector during the year with a strong global increase in demand for bauxite. Despite the continued increase in mining exports in 2020 – as in the last five years with a 4-fold increase in the tonnages exported for bauxite – revenues from the mining sector, which account for more than a third of government revenues¹⁰, have not increased, due to the fall in bauxite prices. It should be noted, however, that 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 is expected to continue to be strong in the coming years (estimated growth of 6.1% in 2022¹¹), supported by a robust and continued expansion of 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 of 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 Guinea Vision 2040 foresight document points out, "*this destiny must be fulfilled while respecting a protected environment that secures the future of future generations*". The NDC's GHG emission reduction commitments are therefore a reflection of national sectoral strategies and plans already adopted at the national level (*Paris Agreement, Art.4.4*), but which require the urgent mobilization of massive resources for rapid implementation and sustainable results.

c. Planning process for the revision of the NDC

The process of preparing the NDC began in November 2019 with the support of UNDP through a workshop involving Ministries, Civil Society and Technical and Financial Partners who validated the principle of a review process. Under the leadership of the National Directorate of Pollution, Nuisances and Climate Change (DNPNC) within the Ministry of Environment, Water and Forests (MEEF) and with the support of the UNDP Climate Promise, the project began in the first half of 2020 with, on the one hand, the realization of an inventory of the implementation of the commitments of the 2015 NDC with the financial support of the African Development Bank, and on the other hand, the mobilization of a team of experts for the revision of the NDC officially launched in July 2020 to comply with the provisions of Decision 1/CP.21 §24. The Covid-19 health context has strongly constrained the authorities involved with a large part of the workshops and preparation meetings organized by videoconference. However, in order to ensure broad consultation with national stakeholders, in particular to collect data and to set the course of ambition, the following have been organised:

- An online survey in order to "*take the pulse of Guinean society on its perception of climate change, the level of knowledge of the Paris Agreement, the NDC and the opinion on the measures taken (or to be taken) in the Republic of Guinea on mitigation and adaptation aspects.*";
- Seven consultation workshops for the revision of the NDC-Guinea, convened by letter No. 679/MEEF/2020 dated August 20, 2020 in the regional capitals were held from August 24 to September 7, 2020. However, the limited size of the workshops was a constraint for a broad mobilization of civil society.
- The mobilization of a Strategic Orientation Committee comprising 10 sectoral ministries, including their Gender and 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 the scenarios and the validation of the provisional NDC, including on the structure of the document in accordance with the provisions of the Rule Book.
- The holding of a first national validation workshop on December 11, 2020.

Thanks to the new available data announced for the 1st half of 2021, and a 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 completion of the following latest activities:

- The holding of a national validation workshop on July 21, 2021 which brought together nearly 80 participants (Ministries, Research Institutes, civil society, private sector and Technical and Financial Partners).
- The submission of the NDC validated by the Council of Ministers and the information of the National Assembly
- Submission to the NDC Interim Registry administered by the UNFCCC Secretariat.

This consultation process will be renewed during the preparation of the 2nd round of NDCs (*Paris Agreement, Art.4.9*) with three changes to come:

- An anchoring on the institutional architecture for the implementation and monitoring of the NDC which is currently evolving and which will be consolidated through the project on the partnership and investment plan;
- Broad participation of civil society and the private sector, particularly in the diagnostic phase on the level of implementation of commitments.
- Taking into account the results of the overall stocktake, in accordance with Article 4, §9, of the PA, in order to present the highest possible level of ambition in the next NDC 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 main planning tool of the Republic of Guinea, under the leadership 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 being developed, taking into account the investments planned under the national budget and the budget of local authorities (unconditional commitments), and will be accompanied by a partnership plan aimed at mobilizing financial partners and the private sector (conditional budget). 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 implementation of these cross-cutting measures, including the implementation of the evolution of the target institutional architecture, is sought.

The Republic of Guinea, as a member of the Economic Community of West African States (ECOWAS), applies community directives and regulations in the areas targeted by its NDC (shared water resources, access to energy services, increase in regional agricultural productivity, etc.). It also participates in ongoing initiatives within the ECOWAS Commission to help harmonize the framework for monitoring climate financial flows in the region, for better comparability and strengthened climate action. To date, however, the Republic of Guinea sets its level of effort in application of Article 4, §2, of the Paris Agreement, independently and not in consultation with the other Member States (Article 4, §16-18, of the Paris Agreement).

d. Application of the provisions of Decision 4/CMA.1 on information to make the NDC clear, transparent and understandable

When the first NDC was established in 2015, no specific guidelines or rules had been issued to harmonize the commitments of country Parties and thus make them comparable. Just like other countries, the Republic of Guinea has therefore made certain choices in terms of content and format. The provisions of the Rule Book, adopted at COP24 and COP25, will only apply in 2024, for the second round of NDCs, but countries are invited to take these provisions into account, as far as possible, as soon as they update their NDCs in 2020 (*Decision 4/CMA.1 §7*). For the revised NDC in 2021, the Republic of Guinea wishes to start moving closer to the provisions that will become mandatory from 2024, intended to strengthen transparency and confidence of the Parties. For example, 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 Rule Book (*Decision 4/CMA/2018/3/Add.1*). To this end, the updated NDC specifies, in particular:

- Quantifiable information on the baseline(s) of the target(s), including a base year.
- Implementation schedules and/or periods, scope and scope, planning processes.
- The assumptions and methodological approaches used, including to estimate and account for GHG emissions.
- Explanations of how the NDC is equitable and ambitious, and how it contributes to the 2°C goal.
- Better documentation of the data used to establish the baseline GHG emissions situation and the assumptions used to construct the scenarios.
- The definition of sectoral indicators and quantified targets for all the commitments made.

As an LDC, the Republic of Guinea remains facing significant challenges in implementing all the provisions (*Decision 1/CP.21, § 31*). This concerns in particular the reference situation of the LULUCF sector with the urgent need to carry out a new forest inventory to accurately assess the current sequestration capacity of Guinean forests, but also to carry out an in-depth study of deforestation vectors. 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 modalities, procedures and guidelines for the transparency of actions and support framework under Article 13 of the Paris Agreement (Decision 18/CMA.1)

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

and the regular publication of statistical yearbooks published by the National Institute of Statistics. More recently, the year 2020 was marked by the launch of the Integrated Public Investment Program Management System (SIGPIP), which should compensate for the weaknesses highlighted by several audits of the monitoring and evaluation of public investments, including in the fight against climate change. Finally, the Republic of Guinea is currently conducting, as part of the development of its TCN, a process of improvement of the IGES system and the skills of the team in charge; this improvement is also accompanied in 2020 by the emergence of a network of climate focal points/climate referents within the sectoral ministries whose mandate is, among other things, to contribute to the collection of data for the realization of GHG inventories. However, several urgent challenges remain to be overcome with the support of the international community:

- Strengthening the system for carrying out and updating national GHG inventories;
- The overhaul of the institutional framework for steering, implementing and monitoring climate action and commitments made under the NDC;
- The establishment of a legal framework on climate to make this mechanism more robust and better coordinated;
- Strengthening and strengthening the mechanism for monitoring and *ex-post* evaluation of commitments under the NDC: The revised 2021 NDC includes specific indicators and targets for each commitment. However, there is still no robust and centralized monitoring and evaluation mechanism for the NDC of the Republic of Guinea and this has yet to be built, backed by the monitoring of the implementation of the PNDES.
- Establishment of the mechanism for monitoring support received under the NDC (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 in the information systems and to manage the budget and coordination will have to be carried out in order for the Republic of Guinea to be able to meet these obligations.
- The coherence of public policies on climate action, and the transversal integration of the NDC's objectives into all the public policies and sectoral strategies concerned.

f. Gender mainstreaming

With a gender index of 0.439 (SIGI Index OECD), Guinea is among the 8 countries (78 out of 86) with the greatest disparities between women and men in the non-OECD area. According to the World Bank¹², reducing gender inequality in the Republic of Guinea could potentially accelerate GDP per capita growth by 0.6 percentage points per year or 10.2% in total 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 household, their overrepresentation in the sectors most impacted by climate change (agriculture, livestock and fisheries) but also 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 mitigation and adaptation measures of the NDC are all likely to improve the adaptive capacities and resilience of women and vulnerable populations in Guinea as a priority. To target these groups as a priority, four cross-cutting actions are priorities: (i) the provision of sufficient operating resources for the "Gender and Equity" services created in 2015 in all ministries¹³, (ii) the integration of adaptation and mitigation issues into the resources dedicated to the National Fund for the Support of 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 according to which women must constitute 50% of the electoral lists, (iv) the establishment of adequate technical training related 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 and aim to promote strong gender integration in public policy planning, and to draw the necessary conclusions on their possible differentiated effects. Impact indicators measure both the standard of living (prevalence of poverty, malnutrition rate) and quality of life (access to water and sanitation infrastructure) of women. Monitoring and results indicators aim to strengthen their autonomy and their place in decision-making bodies (improvement of skills, training in income-generating activities, integration into pastoral conflict management committees).

III. Mitigation commitments

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

General information

The reference year of the 2021 NDC is 2018, the basis of the 3rd 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 3rd IGES are the following: energy, waste, agriculture, industries including mining, households and transport. To estimate emissions from the LULUCF sector, the Forest Emission Reference Level (FREL) was calculated.

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

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

¹³Order No. 1257 of the Ministry of the Civil Service, State Reform and Modernization of the Administration

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

ENERGY SECTOR

The energy sector accounts for emissions related to the following sectors: electricity generation, industries including mining, transportation, households and other gases from energy combustion. The emissions figures are from the 3rd IGES: in 2018, emissions related to the energy sector were 3,863 ktCO₂ eq; according to the projections made, the sector's 2020 emissions amount to 4,475 ktCO₂ eq

The energy consumption profile thus shows the growing share of fossil fuels in the energy mix. The growth in fossil fuel consumption is faster due to growth in certain sectors, including road transport and industrial and mining processes.

⇒ Power 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 is expected to accelerate significantly with the recent commissioning of the Souapiti dam, whose capacity of 450 megawatts (MW) will eventually make it possible to almost double the installed electrical capacity. Disparities between urban and rural areas are very high: 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 a combination 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 a relatively slow increase in supply given the scale of the investments to be made. In total, the installed capacity is estimated at about 562 MW, of which 65% is hydroelectricity and 35% thermal, for a total consumption of 1,182 MWh of hydroelectric origin and 732 MWh of thermal origin in 2018. According to consumption growth estimates, it could reach 6,000 MWh in 2030. The mining sector is the main industrial source of electricity demand. Guinea has a large

¹⁴ Demographic and Health Survey 2018, National Institute of Statistics, July 2019

¹⁵ *Ibid*

hydroelectric potential estimated at more than 6,000 MW (of which about 12% is currently being developed) as well as a significant solar potential (4.8 Kwhm²/day).

The authorities intend to realize this potential through the PNDES (2021-2025), the Energy Sector Development Policy Letter (LPDSE), the General Policy Statement, and the Action Plan 2009-2025. In this regard, 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 into priorities, this strategic option involves (i) the rehabilitation of the production and distribution apparatus of the electricity sub-sector, (ii) the reform of its institutional framework, (iii) the mobilization of Guinea's hydroelectric potential, in particular large and micro/mini power plants, (iv) the promotion of "decentralized" solutions involving local authorities and the private sector at the rural level, (v) the promotion of solutions for the preservation of natural resources, (vi) the use of innovative techniques such as biogas digesters (DABs), (vii) the satisfaction of the needs of rural and peri-urban areas for the implementation of an access to energy services programme, in line with the objectives of the Renewable Energy Policy (PERC) and the ECOWAS Energy Efficiency Policy (PEEC).

The PNDES provides for the following: (i) the implementation of several major hydroelectric projects; (ii) the continuation and completion of institutional structural reforms undertaken in the sector at both the central and decentralized levels (including the establishment of an appropriate legal and regulatory framework and the restoration of the financial equilibrium of the EDG); (iii) electrification of rural localities; (iv) network extensions in peri-urban areas; (iv) diversification of energy sources by favouring renewable energies, in particular micro-hydroelectric power plants, solar and wind energy, biomass and domestic fuels; (v) participation in the process of interconnection of subregional electricity networks.

⇒ Industrial processes

Despite a difficult international environment, the reforms undertaken have led to a revival of investment in the bauxite and gold sectors. The bauxite region of the northwest of Boké is in an unprecedented development dynamic. Overall investment in mining projects could reach USD 50 billion in the next decade.

In three years, bauxite production has increased from 20.2 million tonnes (Mt) in 2014 to 87.7 Mt in 2020, an increase of 334% over the period¹⁶. The production outlook for the next few years is in line with the same trend. According to a 2018 study by CM Group, by 2023, Guinea would supply 32% of the world's bauxite production (compared to about 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 activities expand. In fact, the production of one tonne of aluminium can emit from 1.7 tonnes to 23 tonnes of CO₂ depending on the energy used during the processes, in particular during the melting process.

¹⁶ Mining Statistics Bulletins, NSI

aluminum¹⁷. The development of alumina refining and aluminium smelting are therefore likely to greatly increase the country's electricity demand and CO₂ emissions if capacity is not installed through renewable energies.

In addition, the Republic of Guinea has the world's largest untapped iron reserves, estimated at more than 20 billion tons and of exceptional quality (iron content greater than 60%). Simandou lots 1 & 2 were awarded in November 2020 to the SMB Winning consortium with the signing of agreements and ratifications by the parliament. This reallocation makes it possible to exploit this gigantic mining potential over the period 2020-2030.

The mining development programme¹⁸ provides for bauxite production of 150 million tonnes per year (MTPA) by 2030, and the development of iron deposits for around 140 MTPA.

The activity of mining sites could thus emit around 5,880 kTCO₂ per year in 2030 in the BAU¹⁹ scenario, to which will be added:

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

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) protection of biodiversity in increased mining areas, (iii) systematized disaster risk assessment/management. It therefore does not include a climate change mitigation strategy or emission reduction targets. The strong growth of the sector, which exceeds the scenarios envisaged in 2015, therefore requires a consultation process with the players to promote sustainable development.

⇒ Transport

The data of the transport sector have been updated through the 3rd 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 projects for the rehabilitation and construction of railway lines are identified and financed by the private sector; In particular, these include:

- The "Transguinean" of about 650 km with a cost of USD 5.5 billion, linking the Simandou mine to the future deep-water port of Matakang with a capacity of 80 MT per year (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 in 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 in Port de Benty, 270 km, by Anglo-AfricanMinerals (commissioned before 2030).

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

The Urban Travel Plan (PDU) of Conakry also provides in its privileged integrated scenario for the development of:

- A Le Prince Kaloum / Sonfonya BRT line per corniche of 33.5km.
- A 33.5 km HRT Kaloum / Kagbelen line.

This work is estimated to cost €422 million by 2030 for a cumulative mitigation balance of -919 ktCO₂eq by 2030.

AGRICULTURE SECTOR

The 3rd IGES estimates emissions from the agricultural sector at 7,537 ktCO₂ eq in 2018 (i.e. about 63% of the total excluding LULUCF). It should be mentioned that emissions from slash-and-burn are considerable and represent the largest source of deforestation but are accounted for in the LULUCF sector. The following table shows the emissions of the agricultural sector from all GHGs combined by emitting practices. The main vector of emission is ageing for 71.5% (due to the different methods of manure management and enteric fermentation)

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

Emission item	Average emission level in 2018 (3rd IGES) in ktCO ₂ eq	Share of emissions item / total agricultural sector	Average emission level in 2020 in ktCO ₂ eq	Share of emissions item/total of the agricultural sector
Enteric fermentation	5 215	69,2%	5 532	69,2%
Manure Management	172	2,3%	182	2,3%
Rice cultivation	0	0%	0	0%
N ₂ O from agricultural soils	2 105	27,9%	2 233	27,9%
Burning from Residues Agricultural	43	0,6%	46	0,6%
Total	7 535	100%	7 993	100%

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

Over the period 2013-2018, the cultivated areas of the main food sectors grew by about 4% per year on average, reaching 4.4 Mha in 2018²⁰. Livestock farming has also grown by more than 5% per year for all herds combined. The assumption is that agricultural emissions will continue to grow by 6% per year on average. In 2020, based on the 2018 base year, emissions are estimated at 7,993 ktCO₂eq.

Clear strategic guidance will need to be proposed in the next 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 to this sector in the 2021 NDC, given the country's priority food security issues. A more precise inventory of the sector's emissions and the assessment and prioritization of potential mitigation measures is a priority to anticipate the country's next commitments for this strategic and high-emitting sector.

WASTE SECTOR

Emissions related to the waste sector were 298 ktCO₂eq in 2018 with a growth of 3% by 2030.

Until now, solid waste is not treated in the country, including in the largest cities, generating a significant loss of income in terms of health, the environment and the economy.

However, a large-scale project is being studied to collect Conakry's waste and recover it in the form of electricity from the combustion of methane. This project provides for the collection of 1740 ktonnes of cumulative treated waste by 2025 and 4148 ktonnes cumulated by 2030. **This would avoid about 110 kt CO₂eq/year by 2030, and a cumulative of more than 900 kt CO₂eq by then (Carbon Footprint of the project).**

LULUCAFT SECTOR

Emissions from deforestation, forest degradation and management were estimated using an approach and methods consistent with the Forest Emission Reference Level (FREL) implementation under the UNFCCC REDD+ programme. The NERF was conducted in 2021 and validated at the national level to specify the emissions of the LULUCF sector, for which national data remain very incomplete. **The realization of a complete forest inventory remains a major priority for the country** to assess the precise state of Guinean forests and the drivers of deforestation in order to build a comprehensive protection and restoration strategy, given that the national forest inventory is very old (1988). In particular, adapted and localized strategies must be developed for all the drivers of deforestation, including slash-and-burn agriculture or natural bush fires. Given the richness of Guinean forests in terms of biodiversity, it could be appropriate to integrate the monitoring of habitats and fauna present in the forest into a National Forest and Wildlife Inventory

The equations used to estimate emissions from deforestation, degradation and sustainable forest management were taken from Volume 4, Chapter 2 of the IPCC Guidelines (2006) and its Supplement (2019). The "

²⁰ANASA, 2019

Global Forest Observations Initiative" were also leveraged to implement the previously cited guidelines.

The LULUCF sector includes the following REDD+ activities: deforestation, forest degradation, forest management. For each of these activities, emissions were calculated. These emissions and the methodologies used to calculate them are detailed below:

- Land use change and deforestation emissions calculation

Activity data, relating to land use change between 2015 and 2020, were produced using a land use change map.

Based on the 2014 land cover map produced by NASA's 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.

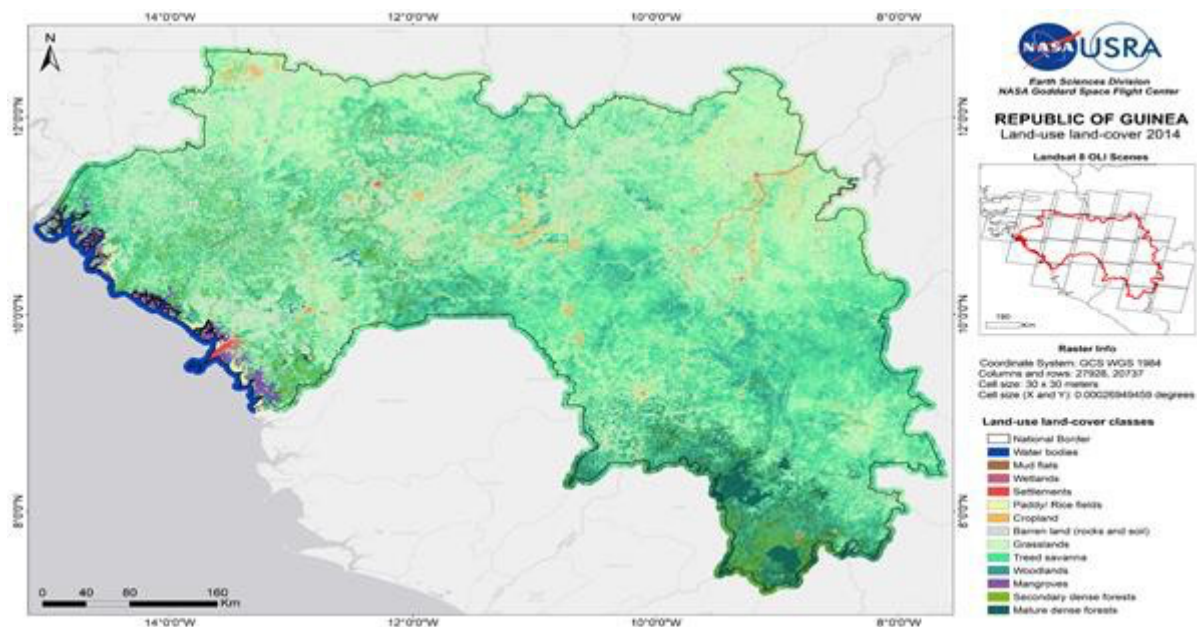


Figure 1: 2014 land cover map for the Republic of Guinea

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

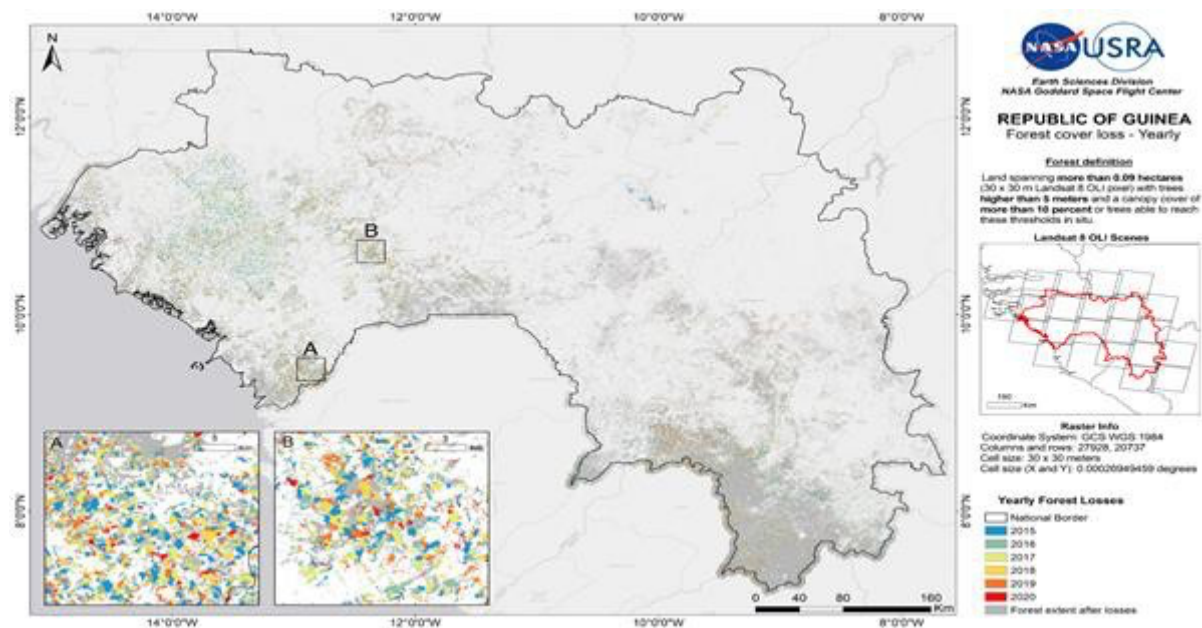


Figure 2: Stratification map – Forest loss between 2015 and 2020 for the Republic of Guinea

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 - State of forests over the period 2015-2020 (NERF 2021)

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

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

Table 5: Emissions from deforestation (in KtCO₂ eq/year)

Deforestation in...	Average Annual
Wooded and wooded savannah	277 853
Open 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

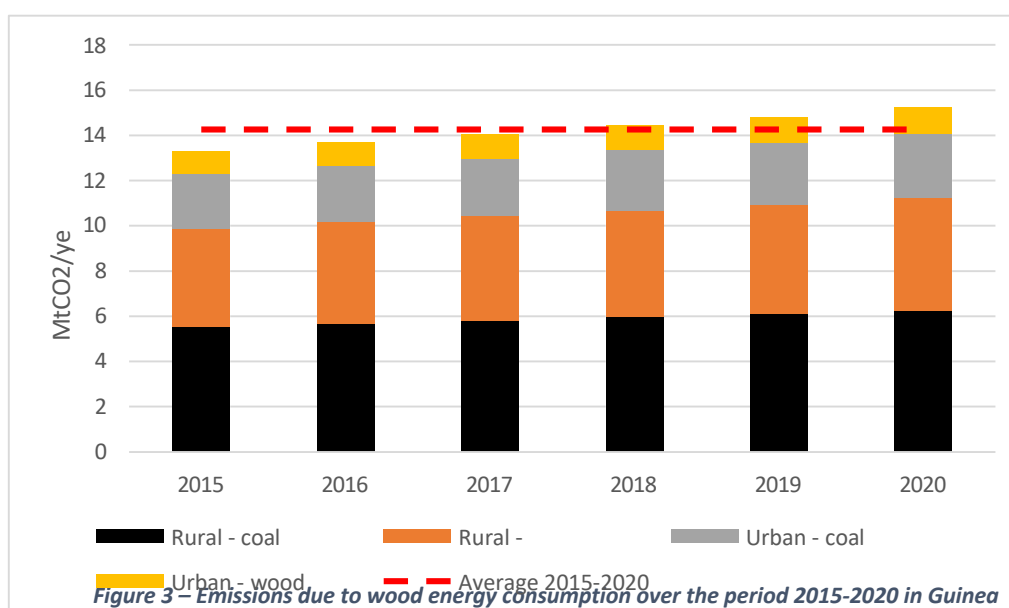
In Guinea, the main cause of emissions from forest degradation is the consumption of wood energy, which includes firewood and charcoal.

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, since the consumption of wood energy is directly related to the size and growth of the population, the demographic model of the National Institute of Statistics was used to take into account 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		Urban Consumption	
	Charcoal	Wood	Charcoal	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 from the consumption of wood energy during the reference period are estimated to average 14,254 kTCO₂/year over the period 2015-20 and are shown in the figure below.



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

- Sustainable forest management - methodology and calculation of emissions

The average annual volume exploited between 2015 and 2020 amounts to 41,767 m³. These statistics form the basis for calculating emissions from industrial timber harvesting.

However, the removal of commercial timber is only one source of emissions from industrial logging.

The other sources are:

- Construction of roads and log yards
- Biomass destruction due to skidding
- Damage to the residual forest stand during felling.

Annual emissions from industrial timber exploitation in Guinea are between 328 and 342 ktCO₂/year over the period 201(-)2020.

Summary: The Forest Reference Emission Level (FREF) is estimated at 33,587 ktCO₂eq per year. Of this total, 57% are related to deforestation, 42% to wood energy consumption (degradation) and 1% to industrial logging (forest management).

Table 7: Summary of LULUCF emissions

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

b. Methodological assumptions and approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, where applicable, removals.

As part of its participation in the 21st Conference of the Parties (COP) in Paris in 2015, the Republic of Guinea presented its Intended Nationally Determined Contribution (INDC) (*Lima Call for Climate Action* §9) to the international community and identified priority mitigation actions to be implemented, on the energy sector, and in particular power generation, forestry, and the extractive industries sector (*Paris Agreement, Art.4*). The Republic of Guinea's GHG emission levels are very low (1 tonne of CO₂ per capita per year excluding LULUCF), compared to a global average level. The development challenge therefore remains a priority in order to meet the essential needs of the Guinean population. However, given the rapid and accelerated loss of forest cover in recent years, the latest available estimates of sequestration potential suggest that the country is on track to become a net emitter of CO₂.

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

19. The revision of the NDC has also been carried out by ensuring better gender integration in the NDC, both in the sectors and actions covered, and in the coordination and monitoring modalities.

c. Scope and coverage

The gases covered by the 2021 NDC are as follows:

Sector (IPCC nomenclature)	Gases covered
Energy	CO ₂ , CH ₄ , N ₂ O
Agriculture	CO ₂ , CH ₄ , N ₂ O
Waste & industrial processes	CO ₂ , CH ₄
LULUCFT	CO ₂

It was decided to base the baseline situation of this 2021 NDC on the data and projections from the 3rd IGES and the NERF, allowing for the construction of more robust ambition scenarios. This new data makes it possible to consolidate and strengthen the commitments made in 2015.

Emission growth projections based on the 3rd IGES were obtained using the Greenhouse Gas Abatement Cost Model (GACMO) tool. This tool allows you to calculate and monitor the reduction of Greenhouse Gases (GHGs) in the following sectors: energy, waste, agriculture, industrial processes.

For the LULUCF sector, the emission scenarios were developed based on data from the NERF 2020.

In view of its status as an LDC and the importance of its development needs, the Republic of Guinea sets relative targets for the reduction of greenhouse gas emissions in 2030 compared to the baseline trend scenario.

The "Business-as-usual" scenario is built on the basis of the following assumptions, starting with the base year 2020, pursuing an emissions growth of 6% per year over the period 2020-2030.

Table 8: Annual GHG emissions growth assumptions for the construction of the BAU 2030 trend scenario

Sector	Business as usual (BAU) assumptions	Sources
Power generation	Electricity production growth: +15%/year over 2020-2030 to ensure domestic growth and industrial connection and +5%/year over 2030-2050.	CDN 2020 SIE 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	Increasing production +15%/year over 2020-2030 and +5%/year over 2030-2050	
Rubbish	Waste + 3% year	Feasibility study for the structuring of the downstream of the waste management sector in Conakry Guinea (AFD, 2021)
Agriculture	+6% per year	3rd IGES
LULUCFT	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 population growth in +2,7%	INS

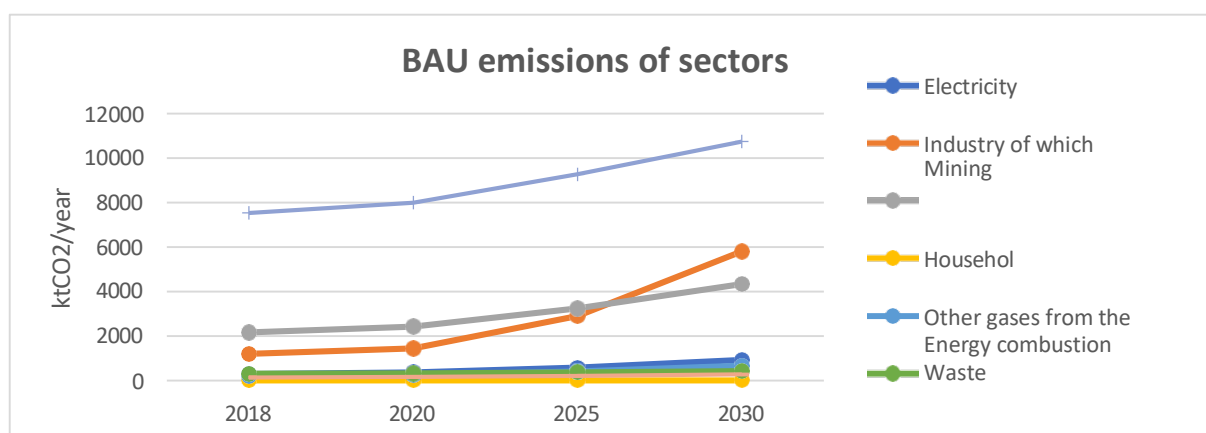


Figure 4: GHG emissions growth trajectory by sector in the non-LULUCF trend scenario

d. Mitigation Commitment Implementation Strategies

Objectives of the NDC

The contribution projects a relative reduction in GHG emissions by 2030 in different sectors of the economy relative to projected emissions under the Trend Scenario (BAU). It is made up of an unconditional contribution (NDC) and a conditional contribution (NDC+). In view of the different methodologies used to establish the baseline between LULUCF and other sectors, commitments shall be treated separately.

Table 9: projected GHG emissions by sector in 2030 according to the BAU, CDN and CDN+ scenarios (in ktCO₂eq) excluding LULUCF

Subdivision sectoral	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 energetic	217	251	398	657	590	486
Rubbish	298	317	367	425	392	258
Agriculture	7 537	7 996	9 271	10 748	10 748	10 748
Process Industrial	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 objective (NDC) at 2,056 ktCO₂eq/year, i.e. a 9.7% reduction in its emissions in 2030 compared to the trend scenario, i.e. an increase in emissions of 5% per year over the period 2020-2030. The conditional target (CDN+) is 3929 ktCO₂ eq/year, i.e. 17.0% compared to the trend scenario, i.e. a growth in emissions of 4% per year over the period 2020-2030.

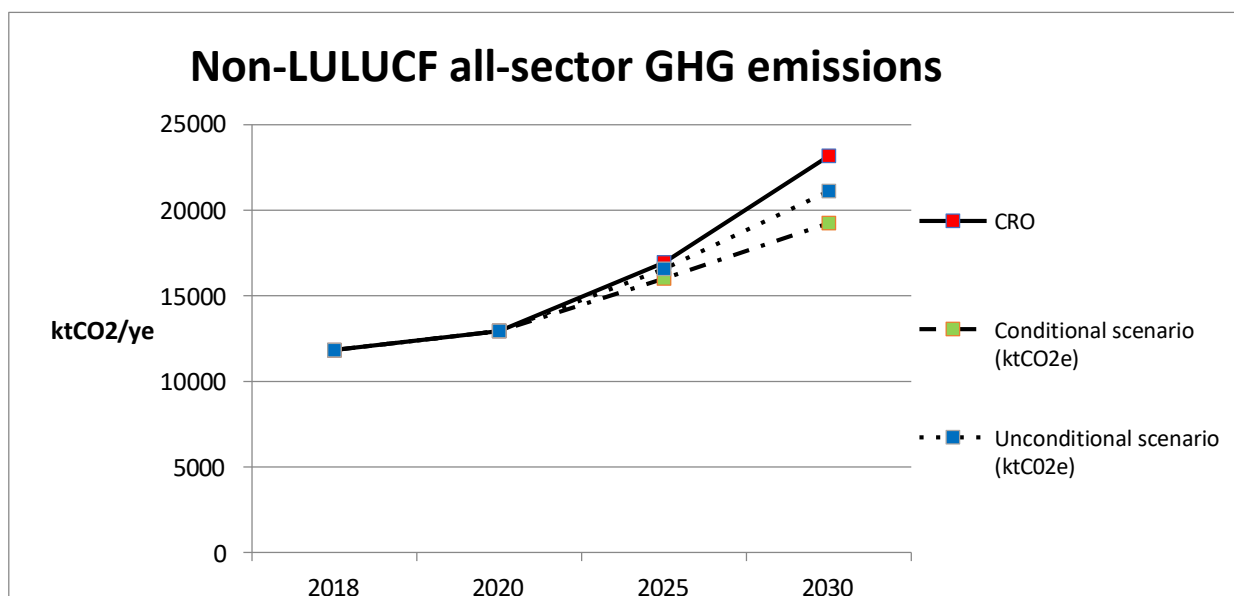


Figure 5: All non-LULUCF GHG emissions, BAU, NDC and NDC+ scenarios

The GHG emission growth scenarios for the LULUCF sector and mitigation measures are based on the 2021 NERF baseline data and their projections, on the national forest investment plan, on the national biodiversity strategy 2016-2025, and on the sectoral policy documents on wood energy and fuel substitution.

Table 10: Deforestation rate and area deforested according to the BAU, CDN and CDN+ scenarios (kteqCO2) according to NERF 2021

Forest type	Area in hectares (2020)	Percentage	Deforestation rate (2020-2030)
Open 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)	2030 NDC scenario Unconditional commitments	2030 CDN+ Scenario Contingent Commitments
Areas deforested in ha by 2030	1 150 950	742 058	217 111

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

Issuing sector	BAU scenario (2030)	2030 NDC Scenario Commitments Unconditional	2030 CDN+ scenario: conditional commitments
Deforestation by 2030 (NERF 2021)	137 025	88 345	25 408

Reforestation cumulative 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 by report at BAU scenario by 2030	-	-64 695	-327 138

Thus, for the LULUCF sector, we observe:

- According to the BAU scenario (2030), a gross emission of 314,175 kteqCO₂ for the sector divided between deforestation and degradation;
- According to the NDC scenario, a gross emission of 255,480 kteqCO₂ from deforestation and degradation as well as a potential for sequestration of 4,514 kteqCO₂ for reforestation and a reduction of 1417 kteq CO₂ for butane gas, i.e. **a cumulative reduction of 64,695 ktCO₂eq.**
- According to the CDN+ scenario, a gross emission of 168,908 kteqCO₂ from deforestation and degradation as well as a sequestration potential of 180,565 kteqCO₂ for reforestation, i.e. **a cumulative reduction of 327,138 ktCO₂eq.**

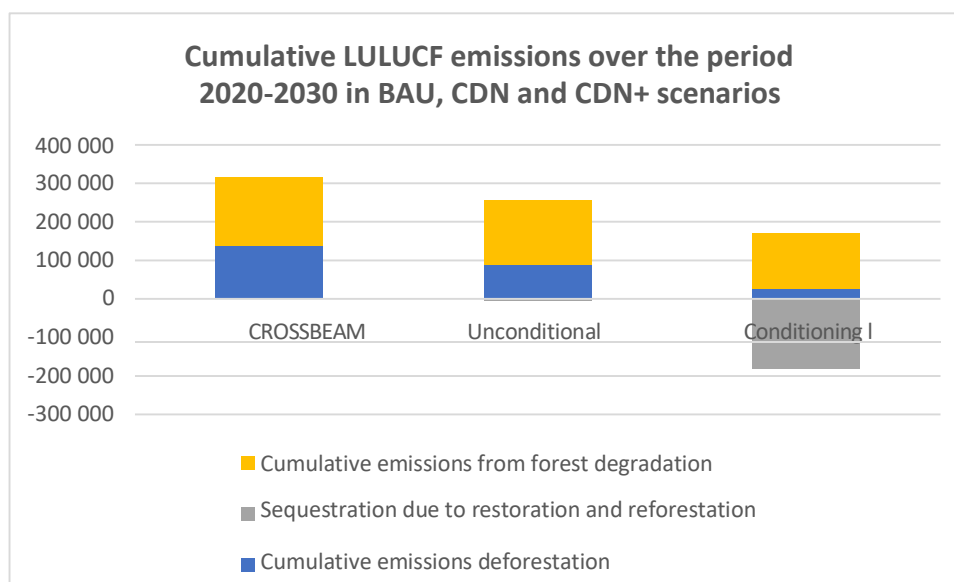


Figure 6: Cumulative LULUCF emissions over the period 2020-2030 under the BAU (trend), CDN (unconditional) and CDN+ (conditional) scenarios

The assumptions and methodological approaches used to account for anthropogenic GHG emissions and removals are consistent with paragraph 31 of decision 1/CP.21 and the accounting guidance adopted by the CMA. **It should be noted, however, that**

Available data do not allow for an update of the level of removals of the LULUCF sector and thus the net emissions of the sector.

Sectoral implementation of commitments

Energy – Power generation	
Commitment	Exploiting renewable energy sources for electricity production as a priority
Background and description of the commitment	<p>The electricity production mix is currently made up of around 60% hydroelectricity. The planned commissioning of several large dams before 2025, combined with the development potential of large and small hydroelectricity, solar PV and wind power, make a target of 70% by 2025 and 80% by 2030 achievable, all economic sectors combined, including mining.</p> <p>Electricity production grew at an average annual rate of 17% over the period 2012-2018. Over this period, the increase in capacity was increased to 40% by thermal power plants.</p> <p>Continuing this trajectory assumes a 6.8-fold increase in electricity produced in 2030 (13,000 GWh annually) compared to 2018 (1,900 GWh), driven in particular by the exponential development of the mining sector connected to the grid and a major consumer of electricity.</p> <p>This trajectory assumes that 90% of new capacity must be of renewable origin and that thermal production peaks between 2025 and 2030 and that electricity production yields compared to the baseline situation are increased by 50% (SE4ALL).</p> <p>This commitment is in line with universal access to electricity for all households by 2030 (SE4ALL), exclusively from renewable sources.</p>
Unconditional goal	<p>Commissioning before 2025 of the dams of:</p> <ul style="list-style-type: none"> - Kaléta planned for 2021, 240 MW; - Souapiti planned for 2021, 450 MW; - Amaria, 300 MW whose construction is 50% complete. - Koukoutamba, 300 MW and Fomi, 90 MW, which have just started. <p>65% of electricity from thermal sources by 2025 75% thermal in 2030</p> <p>All of the above measures would represent a total of 2000 kTCO₂/year avoided in 2030 compared to the BAU scenario for <u>household electricity consumption</u>. Considerable reductions are also envisaged in the mining sector through the connection of currently isolated mine sites to the grid, and are specified below.</p>
Conditional Objective	<p>The conditional objectives also include the dams under study, including:</p> <ul style="list-style-type: none"> - Bouréa (114MW), Kogbédoufrankonédou (110 MW), Poudaldé (120MW) <p>In this scenario, the objective is to reach 80% of electricity production from hydropower by 2030.</p> <p>By 2030, this objective requires the installation of around 2,500 MW of renewable production</p>

	<p>(from all sources)²¹ to absorb electricity demand without increasing new thermal capacity.</p> <p>Achieving 80% of electricity production from renewable sources has the potential to reduce emissions by 5,074 ktCO₂ eq/year by 2030 for <u>household electricity consumption</u>. Considerable reductions are also envisaged in the mining sector through the connection of currently isolated mine sites to the grid, and are specified below.</p> <p>In parallel with the installation of new capacity, the improvement of the electricity network, whose losses amounted to 42% in 2018. The reduction of losses to 100 GWh in 2025 and 200 GWh in 2030 represents an additional mitigation potential of 30 ktCO₂ eq/year.</p>
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LULUCFT	
Household fuels	
Commitment	Modernising the wood energy sector and putting the solutions to heat needs on a renewable trajectory
Background and description of the commitment	<p>75% of the energy consumed in Guinea comes from the forest.</p> <p>It is possible to reduce the average per capita consumption of fuelwood (wood and charcoal) by 50% in 2030 compared to the base year (SE4ALL). This will make it possible to compensate for population growth and maintain overall consumption at around 4,400 Ktoe, thanks to:</p> <ul style="list-style-type: none"> - reduction of carbonization losses; - energy management at the level of households and professional users; - substitution with non-renewable fuels, including butane gas; - the study and observation of the bioenergy sector, its economic, technical, scientific and political framework. <p>The wood energy measures will have an immediate positive impact on the status of women, as they are on the front line in the supply of fuel to households and the preparation of meals.</p> <p>The reduction in fuelwood consumption translates either into time savings on collection, or for those who buy the fuel, into money savings on the fraction of the daily budget managed by women (which includes food, education and child care). Reducing the time it takes to collect wood also reduces the risk of violence against women. In the case of Tier 3 and Tier 4 improved stoves, improved combustion reduces exposure to toxicants in the smoke and the incidence of respiratory diseases for women and infants.</p>
Unconditional goal	<p>- Structuring of local sectors allowing the manufacture and dissemination of 560,000 improved domestic stoves to 20% of Guinean households functional in 2030, allowing a reduction in consumption of 50% on average with a potential reduction of 1,991 ktCO₂ eq/year in 2030</p> <p>Many other tools can be used to reduce the pressure on the forest due to the consumption of wood energy:</p> <ul style="list-style-type: none"> - Promotion and dissemination of efficient and improved carbonization technologies: 5000 production units

²¹ For reference, hydropower alone would be likely to meet the need, with an estimated potential of 6230 MW (World Bank, 2019). However, part of this potential is subject to production sharing and export agreements via OMVG and OMVS.

	<ul style="list-style-type: none"> - Structuring local sectors for the dissemination of fuelwood-saving or renewable technologies in the most energy-intensive sectors (fisheries conservation, other post-harvest and micro-industrial processes: rice, palm oil, salt, bricks, lime, bread, etc.; collective catering) - Encouragement of energy plantations for domestic and commercial purposes - Support for the emergence of local renewable biofuel sectors (briquettes, logs, pellets, agro-waste, ethanol, solar thermal, etc.) - Substitution by biogas (domestic and commercial) <p>The government of Guinea has also undertaken the substitution of part of the biofuels by butane gas through a promotion fund, a gas bottling plant and subsidies. Combined with biogas, the spread of this modern cooking method aims to have a national capacity of 40 ktoe by 2030. This represents 128k LPG stoves with a capacity of 13.1 GJ/year, and a reduction potential estimated at 257 kt CO₂/year in 2030. All of the above measures would represent a total of 2,248 kTCO₂/year avoided by 2030 compared to the BAU scenario.</p>
Conditional Objective	<p>Dissemination 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 improved cookstoves functional in 2030.</p> <p>All of the above measures would represent an additional mitigation potential of 4,480 kTCO₂/year compared to the unconditional target.</p>
Forest cover and forest protection	
Commitment	Urgently curbing deforestation through sustainable forest management and increased protected areas
Background and description of the commitment	<p>Guinea has a rich and varied heritage of biological diversity, including dense humid forests in its southeastern part, 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 highly threatened by increasing anthropogenic pressure, particularly due to biomass consumption, shifting agriculture, bush fires and mining projects. Savannah ecosystems are also seeing a significant decrease in their area under agricultural pressure.</p> <p>A recent forest inventory and a robust assessment of biomass fluxes would facilitate the construction of mitigation options and the assessment of their potential: this sector presents opportunities for sequestration and significant emission reduction. In general, the establishment of a sustainable, effective and regular forest monitoring system is a priority and must be built with the institutions and agencies in charge.</p> <p>The revised Forest Code of 2017 introduces a target forest cover rate 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 under protected area status, i.e. an additional 1054 km² for terrestrial ecosystems.</p> <p>The average deforestation rate over 2015-2020 was 5.3% (NERF 2021).</p>
Unconditional goal	Have an inventory of the forest sector and its carbon stocks ²² , a comprehensive assessment of the drivers of deforestation and emissions related to land use change by 2025. The realization of this inventory also aims to build a targeted strategy to deal with the factors of

²²This work of estimating existing and potential stocks may, if necessary, use allometric equations.

	<p>deforestation, including the end of slash-and-burn agriculture and the fight against bush fires (including natural fires).</p> <p>Make effective the preservation of the 1,882,000 hectares (SNDD, 2017) of classified forests and protected areas through the strengthening of control structures (Guinean Office of Parks and Reserves, nature conservationists), awareness-raising, participatory management, mobilization of local authorities, defense and systematic application of the penalties provided for by the Forest Code.</p> <p>Strengthen cooperation with neighbouring countries for the conservation and sustainable management of transboundary forest landscapes, such as the Operational Memorandum of Understanding between Liberia and Guinea on the conservation and sustainable management of the Zياما-Wonegizi-Wologizi transboundary forest landscape (October 2019).</p> <p>Ensure reforestation programs throughout the territory to the tune of at least 5 million trees per year (about 5000 hectares) and sustainably manage the reforested areas</p> <p>All of the above measures would represent a total of 4200 kTCO₂/year avoided in 2030 compared to the BAU scenario, and a total of 53.2 MTCO₂ over the entire period.</p>
Conditional Objective	<p>Reach the peak of deforestation well before 2030 by preserving forest and savannah areas through: the dissemination of climate-smart agricultural practices because slash-and-burn agriculture remains the leading factor in deforestation; the obligation to offset emissions from the sector mining through projects to increase the forest carbon stock; reducing the risk of bushfires.</p> <p>Definition, implementation and operationalization of a sustainable and effective forest monitoring system by the institutions in charge</p> <p>Implement international commitments in terms of forest and landscape restoration made under the Bonn Challenge and the African 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. End of deforestation by 2030: deforestation rate twice as low over 2020-2030 at 2.6%</p> <p>All of the above measures would represent an additional mitigation potential of 22,500 kTCO₂ eq/year avoided in 2030 compared to 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
Background and description of the commitment	<p>Optimizing to reduce the use of fossil fuels for power generation, transportation, 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 asked to reduce the carbon intensity per unit of production, to actively participate in the national contribution against GHG emissions by deploying all possible clean development solutions, and by deploying the obligation to offset emissions from the mining sector through mitigation and stock increase projects</p>

	forest carbon.
Unconditional goal	<p>For 2025, co-construction of a low-carbon strategy for the national mining sector, with plans decarbonization by 2040, in particular with the realization of an annual carbon assessment of each operating company and the setting of carbon intensity indicators for mining production.</p> <p>Development of energy-intensive activities conditional on the parallel development of rapidly developing renewable electricity capacities at the national level and connection to the main grid. This development of electricity capacity should allow a 10% reduction in carbon intensity per tonne of ore by 2025 and 30% by 2030, which represents the connection to the main electricity grid of about 10% of mining facilities in 2025, and 30% in 2030.</p> <p>All of the above measures would represent a total of 1,740 kTCO₂ eq/year avoided in 2030 compared to the BAU scenario</p>
Conditional Objective	<p>The support of the TFPs should make it possible to accelerate the joint development of electricity capacity for mining activities and the connection to the main grid. In this scenario, the expected reduction is 20% of the carbon intensity per tonne of ore by 2025 and 50% by 2030, which represents the connection to the main electricity grid of about 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 to the unconditional scenario.</p>

Transport	
Commitment	Improving the efficiency of the national transport system
Background and description of the commitment	<p>The modernization of the vehicle fleet is underway with the import ban of vehicles over 13 years old since 2021. There is still considerable room for improvement in controlling and reducing transport emissions.</p> <p>It is also a question of modernising and developing public and private transport, studying and promoting experiments for sustainable mobility and developing rail transport for people and goods. Numerous railway line projects for the transport of minerals are under study or under development.</p> <p>The deployment of the Conakry Urban Development Plan, including a BRT bus line and a train line, is an essential asset to reduce CO₂ emissions but also to improve the living conditions of millions of people in the capital.</p>
Unconditional goal	Application of the ban on the import of vehicles more than 8 years old by 2025 (ECOWAS standard) ; implementation by 2030 of the ban on the import of vehicles over 5 years old (recommendation of the ECOWAS Commission of 2020). That's 500,000 more efficient cars between 2025 and 2030

	<p>Construction by 2025 of 910 km of railway for the transport of minerals, including 650 km for the Transguinean to replace road transport. Added 390 km between 2025 and 2030.</p> <p>All of the above measures would represent a total of 2,300 kTCO₂/year avoided compared to the BAU scenario.</p> <p>Other unquantified measures are also important steps to reduce the sector's emissions:</p> <ul style="list-style-type: none"> - Modernization and rationalization of traffic lanes - Strengthening of roadworthiness tests and inventory of the vehicle fleet, mobile means of inspection and anti-pollution deterrent measures. <p>Study, experiment and publicize innovative sustainable mobility solutions: promote imports and encourage electric mobility, conversion to gas, biofuel (ethanol)</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 the Conakry PDU:</p> <ul style="list-style-type: none"> - A Le Prince Kaloum / Sonfonya BRT line per corniche of 33.5km. - A 33.5 km HRT Kaloum / Kagbelen line. <p>This work is estimated to cost €422 million by 2030 for a cumulative balance of -919 ktCO₂ by 2030.</p> <p>All of the above measures would represent an additional mitigation potential of 2,600 kTCO₂eq/year compared to the unconditional target.</p>

Rubbish	
Commitment	Collecting and recovering urban waste
Background and description of the commitment	<p>Emissions related to the waste sector were 298 ktCO₂eq in 2018 with a growth of 3% by 2030.</p> <p>Until now, solid waste is not treated in the country, including in the largest cities, generating a significant loss of income in terms of health, the environment and the economy. However, a large-scale project is being studied to collect Conakry's waste and recover it in the form of electricity from the combustion of methane.</p>
Unconditional goal	<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 to 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 about 1740 ktonnes of additional treated waste.</p> <p>Together, these projects would represent an additional mitigation potential of 130 kTCO₂/year in relation to the unconditional goal.</p>
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e. Preparation of additional commitments for the second round of NDCs

Commitment	Background and description of the commitment	Objectives
Putting the agricultural sector on a carbon neutrality trajectory by 2050	<p>Agriculture is a major contributor to the country's GHG emissions (62% in 2020), particularly because of livestock activities and slash-and-burn practices.</p> <p>In addition, the agricultural sector is a priority and rapidly growing sector to meet the needs of the population, so emissions are likely to grow rapidly in the next decade.</p> <p>The collection of accurate data on the emissions potential of certain alternative practices in Guinea must be carried out by 2025 to enable commitments from reduction of emissions and sequestration (4 per 1000 initiative) from this date. This involves evaluating the carbon sequestration opportunities of the sector in Guinea: agroforestry practices, sustainable soil management (mulch, crop association), etc.</p>	<p>Set, from 2024, GHG reduction targets for the sector compared to the baseline scenario and carbon sequestration targets.</p> <p>Experiment and identify alternative low-carbon practices for rice cultivation, rice management, livestock residues and savannah burning.</p> <p>Modernization of rural hydraulics through the promotion of modern pumping systems (electricity, solar and wind energy, modern fuels) instead of the human-powered pumping system in 1,000 rural localities and modernization of agricultural and artisanal production systems.</p>

f. Means of implementation

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

Actions	Costs	Source and assumptions
Energy		
Commissioning the Souapiti, Amaria and Koukoutamba dams for a	\$2,177 million	Ministry of Hydraulics

installed capacity of 1050 MW before 2025		
Commissioning at least 2500 MW of additional renewable energies by 2030 guaranteeing universal access to Electricity	USD 6 to 10 billion	The cost of the electricity mix varies according to the production technologies (solar, hydro, biomass, wind) and their scales (solar kits and other pico-solutions, platforms, mini-grids, large power plants). Source: from IRENA
Transport		
Development of passenger and freight transport by rail: at least 650 km of Simandou - Matakang railway	Private funding	The mining development of Simandou allows the "Transguinean" to see the light of day before 2030
Cost of implementation Conakry Urban Travel Plan	USD 496 million by 2030	PDU Conakry
Rubbish		
Investment cost of the waste collection and recovery project in Conakry	Approximately 95 million USD	
Cost of annual waste management	11 to 17 million USD / year (between 90 and 140 USD/ton)	
LULUCFT		
Promotion and dissemination of efficient carbonization technologies: at least 5000 production units	Between 8 and 20 million USD	Need for South-South transfer of more advanced carbonization technologies to complement the Casamance millstone Source: Authors' estimate
Structuring local supply chains to enable the spread of improved domestic cookstoves to 50% of Guinean households by 2030	At least \$10 million USD	International operators specializing in improved cookstoves are interested in supporting Guinea in a Change of scale Source: Authors' estimate
Structuring local sectors for the dissemination of fuelwood-saving or renewable technologies in the most energy-intensive sectors (fisheries conservation, other post-harvest and micro-industrial processes: rice, palm oil, salt, bricks, lime, bread, etc.; collective catering)	USD 1-5 million per stream	International operators specializing in improved cookstoves are interested in supporting Guinea in a Change of scale Source: Authors' estimate

Encouragement of energy plantations for domestic and commercial purposes	\$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 sectors (briquettes, logs, pellets, agro-waste, ethanol, solar thermal, etc.)	To be defined by sector	The financing helps to de-risk the seed and makes it possible to build the framework for a new economic sector of bioenergies
Substitution by biogas (domestic and commercial) Support for the diffusion and use of butane gas	To be defined by program	The financing helps to de-risk the seed and makes it possible to build the framework for a new economic sector of bioenergies
Have an inventory of the sector and a comprehensive assessment of emissions from land use change by 2025.	7 million USD	Estimate made by comparing with the cost of an inventory in other countries in the area
Reach the peak of deforestation well before 2030 by preserving forest and savannah areas through: the promotion of technologies limiting the consumption of wood energy; the dissemination of climate-smart agricultural practices; the obligation to offset emissions from the mining sector through projects to increase the forest carbon stock; reducing the risk of bushfires.	700 million USD	Estimate based on the NSDS budget Annual deforestation rate of around 1.7% over 2010-2017 (source: SNDD 2019) Forest area in 2007 (NSDS) = 13,000,000 ha Forest area in 2020 (estimated) = 10,127,000 Estimated annual deforestation rate over 2020-2030 = 0.85%
Implement international commitments on forest and landscape restoration made under the Bonn Challenge and the African Restoration Initiative (AFR100) (2 million hectares restored)	1 billion USD	Order of magnitude of USD 500/ha Baseline = degraded land Final status = forest
Ensure reforestation programmes throughout the country to the tune of at least 5 million trees per year and sustainably manage the reforested areas	140 million USD	Afforestation/ reforestation Total over 10 years = 50 million trees Planting density = 1,000 trees/ha (cf. ProDoc Bafing) Total area = 50,000 ha USD 8.4 million for 3,000 ha of cashew trees in Upper Guinea (see Guinea INC French)
To make effective the preservation of classified forests and protected areas through the	60 million USD	Estimate made according to the SNDD budget Classified forests = 1,182,133 ha in 2007

strengthening of control structures (Guinean Office of Parks and Reserves, nature conservators), awareness-raising, participatory management, mobilization of local authorities, defense and application of the criminal sanctions provided for by the Forest Code.		(NSDS) 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 leadership 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 developed and will reflect the ambitions taken under the NDC.

The mobilization of resources for the implementation of the NDC's commitments will involve a variety of public funding sources (national budget, bilateral and multilateral public climate finance) but also private funding, taking into account the economic sectors targeted by the NDC (mining, energy, forestry). There is therefore a need to strengthen the commitment of the private sector to climate finance and investment.

The Republic of Guinea is already well organized and equipped in terms of mobilizing the private sector through the actions of its Ministry in charge of Investments and Public-Private Partnerships²³; several sectors of opportunity mentioned by the Ministry are closely linked to the actions integrated into the NDC (energy and hydraulics, agriculture, meteorological infrastructure, etc.). The strengthening of this private sector engagement is based on: (i) the definition of a detailed investment plan presenting the investment opportunities generated by the implementation of the NDC, ensuring that these opportunities are consistent with those already put forward by the government; (ii) raising awareness among the private sector in order to further engage it in the fight against climate change through incentives (more favourable terms for the private sector of public-private partnerships when they commit to respecting the national principles guiding the fight against climate change), sectoral meetings between peers in order to exchange technical itineraries and innovations in favor of the climate in Guinea, and the strict application of the penalties provided for by law (Mining Code, Forest Code, Water Code, etc.).

In addition, the decentralization process has made significant progress since 2017, making local authorities a key player in sustainable development: the revision of the Local Government Code, the establishment of the National Agency for the Financing of Local Authorities (ANAFIC), under the supervision of the Ministry of Territorial Administration and Decentralization, responsible for managing the newly created National Fund for Local Development (FNDL) and supplemented 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 of February 2018. As a new phase of planning at the municipal level opens up (2nd generation local development plans), the vertical integration of climate issues into local planning and budgeting exercises can allow a more systematic orientation towards climate-compatible investments and the implementation of climate change.

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

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

Despite relatively dynamic growth, the Republic of Guinea requires financial and technical support from developed country Parties to the Paris Agreement to mobilize additional climate finance resources 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 risk of debt distress is considered moderate by the international financial institutions. Guinea is relying on borrowing on preferential (concessional) terms, as additional debt capacity remains low despite this growth and the structural reforms undertaken to increase its own fiscal resources. In this context, the Republic of Guinea conditions part of its contribution (CDN+) to the mobilization 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 actions 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 provided for in 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 as soon as possible to be able to actively participate in cooperative approaches, in particular within the framework of the market-based mechanism for sustainable development of Article 6.4 but also of the non-market-based approaches provided for in Article 6.8, to assist it in the implementation of its NDC by seeking synergies between its mitigation and adaptation actions, in the context of sustainable development and poverty eradication.

In particular, Guinea wishes to engage in these cooperative approaches to develop electricity production from renewable energy sources, including small-scale hydropower, solar photovoltaic and wind power, as well as the deployment of improved cookstoves 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 represent 3.4% of the total budget in 2021 (Finance Law).

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 light of its national circumstances?

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. A dynamic of increase in the overall level of production and consumption of goods and services often at the origin, as previously observed in similar situations, of a logical increase in GHG emissions per person. However, the Republic of Guinea intends to be part of the gradual decorrelation between economic growth and GHG emissions observed in the world since 1990. It aims to stabilise per capita GHG emissions (excluding LULUCFT) at 1.2 tCO₂ by 2030 compared to 1.4 tCO₂ in the trend scenario. This commitment reflects a decrease in the carbon intensity of Guinea's GDP, particularly in the mining sector.

It is therefore necessary to frame the future economic growth of the Republic of Guinea with significant commitments in favor of the climate, the investment cost of which is significant. In this regard, the role of the international community, through the orientation of climate finance, is essential. But while the Republic of Guinea is highly vulnerable to the consequences of climate change, especially in terms of strategic resources for the ECOWAS-CILSS zone (water, forests, etc.), it is one of the three countries that has obtained the least multilateral climate finance, with about USD 35 million between 2003 and 2019.

IV. Adaptation commitments

a. Climate Change Impacts and Vulnerabilities of the Republic of Guinea

In 2015, the Republic of Guinea presented to the international community through its NDC the massive efforts that will have to be made by the country to deal with the negative impacts of climate change, as well as 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 at the international level²⁷ confirm the particular vulnerability of several areas of Guinean society: agriculture and livestock, water resources, the coastal zone and the forestry sector. In addition, as already highlighted in the National Adaptation Programme of Action (PANA, 2007), the effects of climate change affect the population unequally. Thus, the poor, rural and those whose activity depends mainly on the exploitation of natural resources are the most vulnerable. According to data from the World Bank portal, it is expected according to the CMIP 5 model developed by the IPCC (Intergovernmental Panel on Climate Change):

- A general increase in average temperatures. According to different emission scenarios from the IPCC's 5th report, the temperature increase will be between 1.1 and 3 degrees by 2060, and between 1.6 and 5.3 degrees by 2090, with an increase of more

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. Periods of high heat will be more intense in the northeast of the country, regardless of the emissions scenario.

- An increase in rainfall during the rainy season according to several CMIP5 models, with however a high intra-seasonal variability. A late start to the rainy season is also expected.
- Sea level rise (around 80 cm by 2100).

Pending the results of ongoing national work to refine climate projections on the basis of the best performing climate models, this NDC commits to undertake so-called 'no-regret' adaptation ^{actions²⁸}, i.e. those that will have the effect of increasing the overall well-being of the population, regardless of the uncertainties associated with currently available climate projections. *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: includes three major points, which are i) the inclusion of provisions on climate change, renewable energy and energy efficiency (Title 6), ii) the creation of the Environment and Natural Capital Fund (Title 7) and iii) proposals to increase the level of sanctions.
- The revision of the Forest Code in 2017: sets a target forest cover rate of at least 30% of the surface area of the national territory, extends the definition of forest domain (including trees outside forests) and gives new and more restrictive provisions on exploitation and reforestation.
- The development of the National Water Policy (2018): aims to develop an integrated approach to water resources throughout the national territory and includes climate issues in a cross-cutting way.

b. Framework documents for adaptation in the Republic of Guinea

The National Adaptation Plan, currently under development, will constitute the communication document on adaptation of the Republic of Guinea, taking into account the guidelines set out in decision 5/CP.17. However, pending this document, the Republic of Guinea decides to communicate in its 1st NDC information consistent with Decision 9/CMA.1, in order to demonstrate Guinea's priority to combat the impacts of climate change, to strengthen the support of the international community for the most urgent adaptation measures and to contribute to the global stocktake, in particular to assess the achievement of the global objective of adaptation (Article 7 - Agreement of the United Nations). Paris).

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

²⁸The actions to be implemented to lead the territory towards resilience must meet various criteria. They must be flexible and adapt to the production of new knowledge on climate projections, not conflict with the principle of climate change mitigation and present benefits for the territory, regardless of the future situation and regardless of the level of uncertainty related to climate projections. These are called no-regret measures: these actions have benefits even if the impact of climate change is lower than envisaged.

c. The adaptation plan and the measurement of its impacts

Preliminary remarks			Impact indicators
<p><i>A framework detailing the indicators for monitoring and results of actions, as well as the reference situations and targets, has been created and will be integrated into the Republic of Guinea's transparency report. This table refers only to impact indicators, which measure the long-term effect of adaptation interventions. 3 general indicators are proposed, as well as specific indicators by commitment. Indicators already available according to a gender-specific disaggregation through national or international data are marked with a (*).</i></p>			<p>Gini index</p> <p>Synthetic index of 11 adaptability indicators proposed by UNEP29</p> <p>Share of national cereal food needs met by national production</p>
Commitment 1	Justification	Actions	Impact indicators
Development and implementation of the National Water Policy (NWP) action plan	<p>The Republic of Guinea is considered the "water tower of West Africa". Four basins of capital importance for the sub-region, in particular because of the potential they hold in terms of economic development and the maintenance of biodiversity, have their source in Guinea.</p> <p>According to the latest national estimates, under the effect of climate change, river flows could be reduced by more than 50% of the current daily average by 2100. These estimates deserve to be revised in the light of the current state of science, which is particularly uncertain about precipitation projections.</p> <p>However, water resources are expected to face three main threats: (i) the combination of strong population growth that is increasing pressure on resources; (ii) the development of economic activities that have a direct qualitative and quantitative impact (mines and water infrastructure) ; iii) the degradation of riparian forests and spring heads, which generate a decrease in flows.</p> <p>It is then necessary to adopt a strategy called "without regrets", i.e. which increases the</p>	Preservation and restoration of riparian forests, springheads, banks and riverbeds, particularly on transboundary rivers, in particular through the development of IWRM action plans	<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>
		Search for alternatives to the financing of activities to preserve degraded transboundary river basins, following uses and withdrawal, and the degradation of water quality (brick factories, dredging of beds for the search for minerals)	
		Integration of the climate change dimension into all institutional and legal frameworks and basin bodies to ensure the management and development of	

²⁹The adaptation gap - health report - UNEP, 2018

	<p>well-being of populations independently of climate projections.</p> <p>At the international level, given Guinea's strategic position, upstream of the main West African river basins, water resources management choices will inevitably have impacts downstream, beyond Guinea's borders. These international implications make Guinea's responsibility for the sound management of its resources in the current context of climate change all the greater. The Republic of Guinea now has the necessary arsenal to implement a coherent policy, in particular through its National Water Policy (2018). The country's weakness lies in the lack of coordination between actors and funding that would allow it to implement the targeted objectives, hence the need to have an IWRM-based NCP Action Plan.</p> <p>Regarding the issue of gender, the availability of water resources has a major impact on the place 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 waste of time and energy that constrains their economic and social autonomy. In this respect, the measurement of the share of women with access to a source of drinking water and sanitation infrastructure provided for in the country's detailed commitments provides information on the evolution of their conditions</p>	Transboundary watersheds	
		Strengthening of the hydro-ecological monitoring system for international rivers.	
		Access to a clean and hygienic living environment	
		Improved assessment of impacts of CC and economic activities on surface water (river flow) and promote studies on the economic values of protected areas and ecosystem services.	
		Ensure universal and equitable access to drinking water for the population.	
Commitment 2	Justification	Actions	Impact indicators
Put in place the necessary measures to protect, conserve and manage ecosystems, revitalize economic activities and strengthen the resilience of	The coastal zone is a strategic area in the Republic of Guinea. Indeed, it is the country's leading economic zone and is home to about 38% of the population. It also plays a fundamental role for the agricultural and energy sectors. It contributes 24% of the national rice production. The agricultural land potential of Lower Guinea is 1.3 million	<p>Development of an Integrated Coastal Zone Management (ICZM) plan</p> <p>Drafting of the Coastal Law</p> <p>Implementation of Marine Spatial Planning (MSP) and</p>	<p>Incidence of poverty in the regions of Lower Guinea (Boké and Kindia) compared to national results*</p> <p>Proportion of agricultural land</p>

populations of its coastal zone	<p>hectares, of which 380,000 ha are cultivated each year. Various cereal, fruit, vegetable and tuber crops are grown behind the mangroves. Of the 385,000 ha of mangrove initially existing, more than 140,000 ha have been converted to rice fields. The latter also provides 60% of the domestic energy of the capital and the main coastal cities.</p> <p>The coastal zone is particularly vulnerable to climate change, due to rising sea levels and intensified coastal erosion, with impacts on fisheries resources, destruction of infrastructure in coastal towns and villages, and the disappearance or salinization of rice-growing plains.</p> <p>All these elements make it an area under very strong pressure, due to the economic activities that are taking place there, the anarchic urbanization that is necessary, due to the lack of a coastal code and respect for the land code, and the impacts 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. In addition, they are more vulnerable to the vagaries of climate change due to fewer and more volatile resources, which constrain their ability to adapt.</p> <p>In this respect, the distribution of improved stoves and stoves provided for in the country's detailed commitments is particularly aimed at women.</p>	Blue Economy Strategy	lost due to marine submersion Proportion of the fish stock at biologically viable levels (not overfished).
		Updating of the Mangrove Management Master Plan (SDAM).	
		Reduction of sources of mangrove degradation.	
		Integration of adaptation into LDPs and tools of the municipalities of the coastal zone.	
		Strengthening of scientific knowledge along the entire coastline.	
		Development of rice production by improving yields through the use of varieties more adapted to the impacts of climate change (in particular saltwater intrusion).	
Commitment 3	Justification	Extension of pilot initiatives already launched, in particular the project Strengthening Resilience and Adaptation to the Negative Impacts of Climate Change in Vulnerable Coastal Areas of Guinea (RAZC) to all the municipalities of the coast.	Impact indicator
		Assessment of the impacts of CC on coastal infrastructure (ports, roads, etc.).	

Support the adaptation efforts of rural communities to develop agro-sylvo-pastoral techniques that allow them to continue their activities and preserve the resources on which they rely	<p>Food security is currently not guaranteed in the Republic of Guinea. The priority is therefore to increase production, despite the possible negative effect of climate change on agricultural yields.</p> <p>In addition to ensuring the primary needs of the population, intervening in agricultural practices makes it possible to rationalize the management of land and water resources, which represent a considerable potential for reducing GHG emissions.</p> <p>Women living in rural areas are also particularly vulnerable because of their specific role in agriculture. Indeed, their access to inputs, technical advice, improved technologies, land ownership and decision-making processes is limited compared to humans, thus limiting their resilience to climatic hazards.</p> <p>In this respect, the search for parity in the agro-pastoral conflict management committees provided for in the country's detailed commitments aims to strengthen the place 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)
		Integration of the climate change dimension in local planning (PDL and PAI)	Performance of strategic main productions
		Development of techniques for the conservation and processing of agro-sylvo-fish products.	Proportion of total land area occupied by degraded land
		Better management of agropastoralism, particularly transnational, through the construction of pastoral facilities, in order to limit the degradation of pastures and soils and to mitigate the risks of conflicts of use.	Proportion of agricultural area destroyed by natural disasters

d. Adaptation actions resulting in mitigation co-benefits in accordance with Article 4, paragraph 7, of the Paris Agreement

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

As previously expressed, the Republic of Guinea's climate projections need to be updated by the National Directorate of Meteorology in the light of the most recent science in climate modelling. 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 so-called "no regrets" approach. Thus, the adaptation measures envisaged today have been designed to increase the well-being of the population no matter what, regardless of the uncertainties linked to climate projections

currently available, in particular in terms of modifying rainfall patterns. The economic and social consequences of the measures have therefore been placed at the heart of the reflection on 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

First, the adaptation measures included in the NDC emphasize an overarching concept: the polluter pays principle. Although it is integrated into the legislation of the Republic of Guinea (Environment, Forestry, Water and Mining Code), this principle is difficult to apply. Strengthening its implementation would have a double interest in terms of mitigation, namely to constrain the largest GHG emitters and therefore limit their emissions and to provide an additional source of revenue for the legislator to implement virtuous projects. Secondly, the objective of restoring and preserving the heads of springs, banks and riverbeds is also a source of co-benefits in terms of mitigation.

e. Assessment of Financing Needs 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 has been put in place to mitigate and adapt to it. In other words, the cost of climate inaction represents the maximum level of damage that a society can potentially sustain as a result of climate change. The recent work of the *World Wildlife Fund* (WWF)³⁰ measures this cost through the potential loss, due to climate change, of 6 ecosystem services. In the case of Guinea, the total cost of climate inaction through this approach is between USD 1.91 billion and USD 4.37 billion, depending on the theoretical choices on the discount rate³¹, by 2050.

It should be noted that this approach is a way of entering into the problem and making international comparisons, but remains indicative³².

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

- Macroeconomic estimation is in line with the methods developed in the reports of international institutions³³, and corresponds to a so-called "Bottom up" approach. Based on the existing literature, the recent work of Chapagain et al. (2020) proposes a model that establishes a causal relationship between climatic (rising temperatures), socio-economic (GDP per capita) data and the cost of adaptation. By applying this method to the Republic of Guinea, the country will face adaptation costs

³⁰Global *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 should soon update its work and continue research to make it more applicable.

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

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

total between USD 713 million and USD 1,922 million by 2030, based on climate projections and discount rates¹⁶. The lowest value corresponds to the RCP4.5 scenario with a high discount rate, while the largest value corresponds to the RCP8.5 scenario with a low discount rate.

- The estimate per adaptation measure included in the NDC indicates that the costs are expected to amount to USD 1 billion by 2030. The consultants relied on 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 monitoring indicators are the subject of a separate document that will be integrated into the first transparency report (2024).

The Republic of Guinea will therefore have to face colossal costs to meet the challenge of adapting to climate change. However, given the potential costs of inaction and the scale of climate change, to which the country contributes very marginally, investing in adaptation measures is essential and rational.