



## CENTRAL AFRICAN REPUBLIC

Unity - Dignity - Work

### MINISTRY OF THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

#### NATIONAL CLIMATE COORDINATION



## NATIONALLY DETERMINED CONTRIBUTION (NDC) REVISED VERSION



October 2021



## TABLE OF CONTENTS

### SUMMARY

1.	INTRODUCTION_____	6
2.	NATIONAL CONTEXT _____	8
3.	MITIGATION OF GREENHOUSE GAS EMISSIONS AND CLIMATE POLLUTANTS _____	13
4.	ADAPTING TO THE EFFECTS OF CLIMATE CHANGE _____	23
5.	MEANS OF IMPLEMENTATION _____	31
6.	MEASUREMENT, NOTIFICATION and VERIFICATION MECHANISM (mnv)_____	33
7.	Information to facilitate clarity, transparency and understanding _____	34

## SUMMARY

The revision of the Nationally Determined Contribution (NDC) is in line with the objectives pursued by the Government of the Central African Republic as part of the National Recovery and Peace Consolidation Plan (RCPCA), the country's main strategic planning instrument. It consolidates the achievements of the first generation of NDCs and makes significant methodological improvements.

It is based on the likely consequences of climate variations and changes projected to 2030, the evolution to date of greenhouse gas emissions and absorptions, and existing and potential impacts and vulnerabilities, in order to :

- Describe a trend scenario (or *Business as Usual Scenario-BAU*) for greenhouse gas emissions over the 2010-2030 cycle in the sectors that emit the most: Energy; Agriculture, forestry and other land uses (AFAT); Industrial processes; Waste;
- Propose mitigation measures likely to curb the trend curve according to an unconditional scenario (investments agreed by the State) and a conditional scenario (additional investment needs required from the international community).
- Identify, according to a conditional scenario and an unconditional scenario, adaptation measures in the most vulnerable sectors (Agriculture, Energy, Forestry, Water Resources, Health, Spatial Planning, Infrastructures and Housing), in line with the objectives pursued by sectoral planning.

The trend scenario shows a rise in greenhouse gas emissions from 10,040 GgeCO<sub>2</sub> in 2010 to 14,141 GgeqCO<sub>2</sub> in 2025 and 17,644 GgeqCO<sub>2</sub> in 2030. The sequestration capacity over the same horizons is 730,714 GgCO<sub>2</sub> and 733,607 GgCO<sub>2</sub> respectively.

The mitigation measures taken will generate, according to the unconditional scenario, a reduction in greenhouse gas emissions of 9.03% and 11.82% respectively by 2025 and 2030 compared with the baseline situation; and according to the conditional scenario 14.64% and 24.28% by 2025 and 2030 compared with the baseline situation.

The CAR's NDC builds on the existing inventory of short-lived climate pollutants (SLCPs) to broaden the range of gases covered, in addition to greenhouse gases. Emissions of organic carbon (CO), which accounts for 61.9% of total emissions of SLCPs, are expected to fall significantly under the proposed mitigation measures, at the same time as the other SLCPs (13.67% to -55.31% depending on the type of pollutant by 2030).

In terms of adaptation measures, the targeted actions proposed in the most vulnerable sectors should make it possible, by 2030, to reduce the impacts and vulnerabilities generated by current and future climate change.

The financial requirements associated with the implementation of all the actions described above are estimated at \$1.764 billion, of which :

- 1.32 billion for mitigation: \$236 million unconditional and \$1.08 billion conditional;
- 443.87 million for adaptation: \$44.38 million unconditional and \$399.48 million conditional.

The implementation of mitigation and adaptation measures and the support received in terms of technology, capacity-building and financing are monitored by a measurement, reporting and verification system based on the national SDG monitoring system. This MNV system facilitates, among other things, the updating of inventories and the periodic reporting of progress made by CAR to the United Nations Framework Convention on Climate Change (UNFCCC).

## TABLES AND FIGURES

Figure 1: Observed temperatures in CAR 1951-2020 (Source: CCKP, 2021)	8
Figure 2: Average annual rainfall observed in CAR: 1951-2020 (Source: CCKP, 2021)	8
Figure 3: Risk of fluvial and urban flooding and drought in CAR (source: ThinkHazard, 2021)	9
Figure 4: Economic impact of climate change on the Central African Republic (Source: Stanford, 2021)	10
Figure 5: Breakdown of GHG emissions by sector (Source: Third National Communication)	11
Figure 6: % of PCCVD emissions by source	12
Figure 7: GHG emissions for the BAU scenario (2010-2030)	13
Figure 8: PCCVD emissions - trend scenario (2010-2030)	14
Figure 9: Energy sector emissions-trend scenario, unconditional NDC and conditional NDC	16
Figure 10: AFAT sector emissions-trend scenario, unconditional NDC and conditional NDC	18
Figure 11: Emissions from the PIUP sector-trend scenario, unconditional NDC and conditional NDC	20
Figure 12: Global emissions-trend scenario, unconditional NDC and conditional NDC	21
Figure 13: Global removals-Trend scenario, unconditional NDC and conditional NDC	22
Figure 14: Impacts and vulnerabilities by sector	23
Figure 15: MNV-Mitigation device	<b>Error! Bookmark not defined.</b>
Figure 16: MNV-Adaptation device	<b>Error! Bookmark not defined.</b>

Table 1: Projected changes (Source: CCKP-2021 & GERICS-2015)	9
Table 2: Growth rate of GDP in the CAR over the five-year period 2017-2021 (Source: MEPC, 2020)	10
Table 3: Summary of emissions from the third national communication (Gg CO <sub>2</sub> e)	11
Table 4: Breakdown of PCCDV emissions by source	12
Table 5: Reduction in PCCDV emissions under unconditional and conditional scenarios	22
Table 6: Impacts and vulnerabilities by sector	24
Table 7: Information to facilitate clarity, transparency and understanding	36

## ACRONYMS AND ABBREVIATIONS

AEP:	Drinking water supply
AFAT:	Agriculture, forestry and other land uses
AR6:	Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC)
ATPC:	Total Sanitation Led by Communities BAU: Business As Usual
UNFCCC:	United Nations Framework Convention on Climate Change
CDN:	Nationally Determined Contribution
CO:	Organic carbon
CO <sub>2</sub> :	Carbon dioxide or carbon dioxide
NMVOCs:	Non-methane volatile organic compounds
CH <sub>4</sub> :	Methane
DGEP:	Directorate General for Research and Planning
DGEPC:	Direction Générale des Etudes, de la Programmation et du Control
DGPC:	Direction générale de la protection civile (Directorate-General for Civil Protection)
DPEN:	National Energy Policy Document
HFC:	hydrofluorocarbons
ICASESS:	Institut Centrafricain des Statistiques et des Etudes Economiques et Sociales
ICRA:	Institut Centrafricain de la Recherche Agronomique
GHG:	Greenhouse gases
HDI:	Human Development Index
LPG:	Liquefied Petroleum Gas
MDERH:	Ministère du Développement de l'Energie et des Ressources Hydrologiques
MNV:	Measurement, Notification, Verification
MTPER:	Ministry of Public Works and Road Maintenance
MURFVH:	Ministère de l'Urbanisme, de la Réforme Foncière, de la Ville et de l'Habitat
NO <sub>x</sub> :	Nitrogen oxides
N <sub>2</sub> O:	Nitrous oxide
ODD:	Sustainable Development Goals
PIUP:	Industrial processes and use of Products
PCCDV:	Short-lived climate pollutants
PM <sub>10</sub> ; PM <sub>2.5</sub> :	Particulate matter in suspension
PNIASAN:	National Agricultural Investment Programme for Food Security and Nutrition
NAP:	National Adaptation Plan
NTFP:	Non-timber forest products
SODECA:	Central African water distribution company
RPCA:	Plan National de Relèvement et de Consolidation de la Paix (National Recovery and Peace Consolidation Plan)
SDRSA:	Stratégie de Développement Rural, de l'Agriculture et de la Sécurité Alimentaire
SNAT:	Schéma National d'Aménagement du Territoire (National Spatial Planning Scheme)

## 1. INTRODUCTION

The revision of the CAR's NDC is a response to the urgent need for ambitious action in the face of the global climate crisis and rising global temperatures.

In line with the first NDC of 2016 and the relevant provisions of decisions 1/CP.21, 4/CMA.1 and 9/CMA.1 of the United Nations Framework Convention on Climate Change (UNFCCC), the revised NDC confirms the country's aspiration to make a significant contribution to global efforts to combat climate change. This second generation of NDCs makes significant advances on the first:

1. The formulation process was carried out in an inclusive manner, involving the various stakeholders grouped around a multi-stakeholder committee responsible for the strategic steering and validation of the results, and sectoral working groups (six in total), responsible for proposing and/or amending the proposed contributions, under the heading of mitigation and adaptation. As a result, the data collected from primary suppliers is of better quality. The processing and analysis were based on the expertise of the official bodies responsible for sectoral statistics.
2. It covers more sectors and gases:
  - a. The sectors and sub-sectors covered include, in addition to those of the first generation, transport, mining, spatial planning and housing, in accordance with the recommendations of the evaluation report of the first NDC.
  - b. The coverage of greenhouse gases has been extended to include hydrofluorocarbons (HFCs), in addition to carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). Better still, short-lived climate pollutants (SLCPs) have been taken into account, because of their potential role in reducing global warming.
3. The revised NDC is based on an improved and more robust database for estimating the emissions and removals of the reference scenario: the time series used is presented with annual data, unlike the first NDC, where the results summed over the 2003-2010 time series show overestimates, particularly in the Agriculture, Forestry and Other Land Use (AFAT) sector. The trend scenario or BAU scenario is therefore more realistic and more credible, as it is based on more disaggregated, high-quality data and covers more sectors.
4. The implications of the corrections indicated *above* are a revision of the emissions of the trend scenario compared with the first NDC. These are 10,040 GgeCO<sub>2</sub> in 2010 and 17,643 GgeCO<sub>2</sub> by 2030.
5. In relative terms, the revised NDC's ambitions for reducing greenhouse gas emissions are greater than those of the previous NDC (24.28% by 2030 compared with the trend scenario, compared with 5% for the first NDC). In absolute terms, the reduction is smaller: 4,284.42 GgeCO<sub>2</sub> compared with 5,500 GgeCO<sub>2</sub> for the first NDC.
6. The proposed mitigation measures incorporate the most realistic measures from the first NDC and consolidate them with new measures.
7. Adaptation planning is made more robust by measures based on targeted objectives, consistent with sectoral objectives.
8. A measurement, notification and verification system is proposed.

In view of the improvements made possible by the review process, the CAR now has an effective tool for steering public action in the medium term (up to 2030) that takes account of the projected effects of climate change, and the means of mitigating these effects.



## 2. NATIONAL CONTEXT

### CURRENT AND FUTURE CLIMATE IN THE RCA

The climate in the Central African Republic is characterised by an upward trend in mean annual temperature of around 0.3°C per decade, which began in the 1970s<sup>1</sup>. This variation, which varies according to climatic zone, increased more rapidly from the 1950s onwards, particularly in the south-western regions. Over the last thirty years, annual rainfall has shown a slight upward trend, estimated at 8%<sup>2</sup>. This relative increase is accompanied by an upward trend in extreme events, reflected in a rise in the number of rainy days with 10 mm of rainfall over the same period. The most marked climatic hazards in recent years have been storms, flooding (in the south-west<sup>3</sup>) and drought (in the north). Climatic conditions remain favourable to epidemics of bacterial and viral diseases. The probability of the occurrence of annual epidemics of meningococcal meningitis during the dry season remains very high in the northern part of the country, which lies in the meningitis belt.

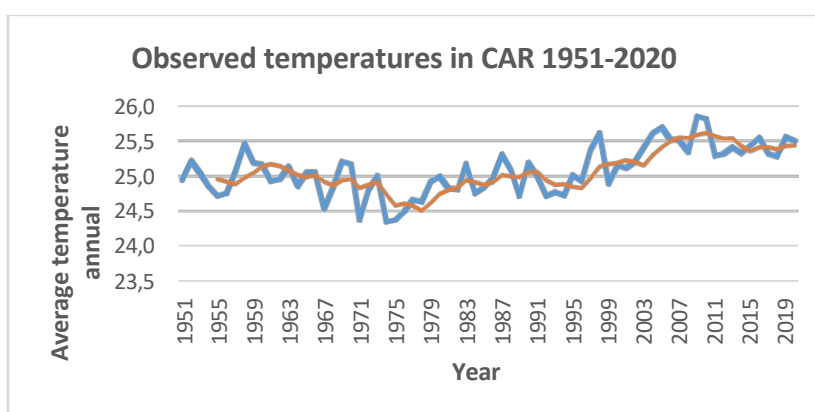


Figure 1: Observed temperatures in CAR 1951-2020 (Source: CCKP, 2021)

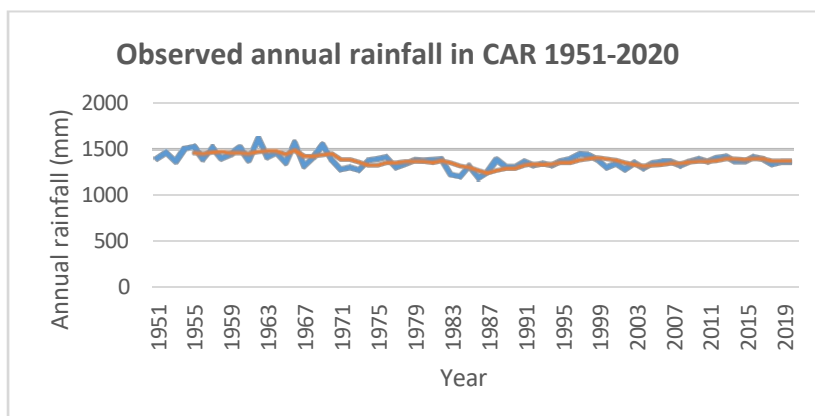


Figure 2: Average annual rainfall observed in CAR: 1951-2020 (Source: CCKP, 2021)

<sup>1</sup> WB Climate Change Knowledge Portal (CCKP, 2021). Central African Republic URL: <https://climateknowledgeportal.worldbank.org/country/central-african-republic/climate-data-historical>

<sup>2</sup> GERICS (2015). Climate-Fact-Sheet, Central African Republic

<sup>3</sup> The 2009 attacks around the urban areas of the capital, Bangui, cost \$6 million and caused losses estimated at \$2.6 million.



Cmip5	Projections based on a RCP 8.5 scenario <sup>4</sup>				
	Observations (1986 to 2005)	Horizon 2030	Horizon 2050	Horizon 2070	Horizon 2090
Annual temperature anomaly (°C)	+0.35 °C per decade	<b>+0.7 to +1.5</b> (+1.1°C)	<b>+1.4 to +2.7</b> (+1.9°C)	<b>+2.3 to +4.2</b> (+2.8°C)	<b>+3.1 to +5.7</b> (+3.8°C)
Annual precipitation anomaly (mm)	+8 %	<b>-18.4 à +21.9</b> (0.8 mm)	<b>-21.0 à +29.6</b> (1.7 mm)	<b>-21.5 à +38.5</b> (5.5 mm)	<b>-28.2 à +50.4</b> (6.6 mm)
Heavy rain (%)		-2 à +14%	-2 à +22%		
Drought periods (days)		-9 to +3 days	-15 to +3 days		

Table 1: Projected changes (Source: CCKP-2021 & GERICS-2015)

Temperature projections show an increase of between 0.7 and 1.5°C by 2030 for the RCP 8.5 scenario, and an increase of between 1.4 and 2.7°C by the middle of the 21st century<sup>5</sup> compared with the 1986-2005 reference period. Projections for annual precipitation show a slight upward trend in total annual precipitation<sup>6</sup>.

A probable increase in rainfall variability is expected, marked by an increase in the frequency (strong trend) and intensity (slight trend) of extreme events<sup>7</sup> likely to lead to occurrences of fluvial flooding (see figure 3) over a large part of the country, and urban flooding in the regions of Ombelle Mpoko (Bangui) and Haute Kotto (Bria). As far as dry periods are concerned, the highest risks are located in the Vakaga and Haute Kotto regions.

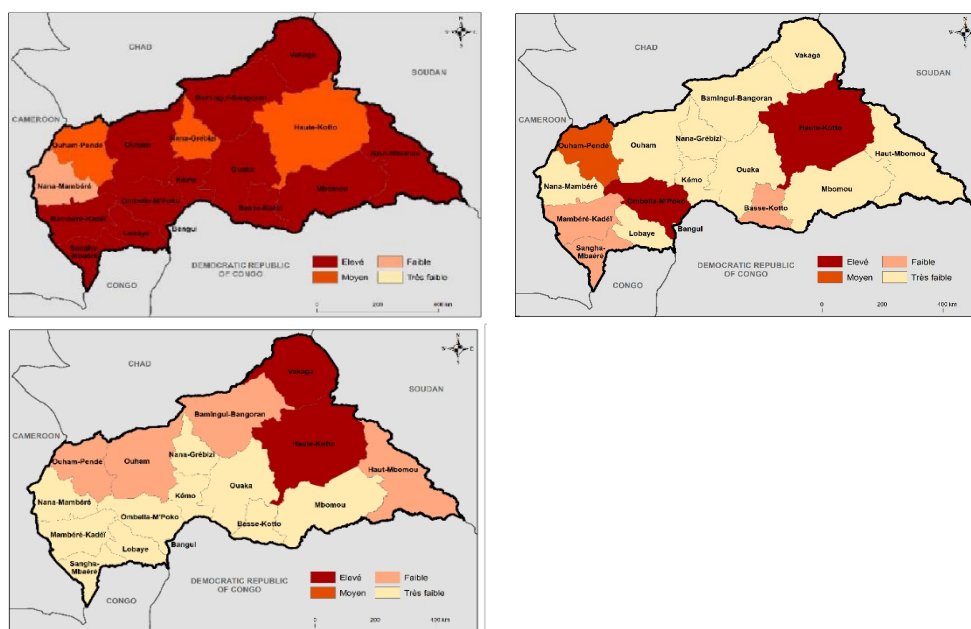


Figure 3: Risk of fluvial and urban flooding and drought in CAR (source: ThinkHazard, 2021)

<sup>4</sup> The value in bold corresponds to the range (10th-90th percentile) and the values in brackets indicate the median (or 50th percentile). For heavy rain and dry periods, the values correspond to the 5th and 95th percentiles (90% in the centre).

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

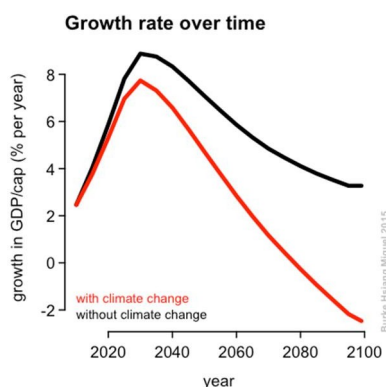
<sup>7</sup> Confirmed by the 7th IPCC report. Cf: IPCC, 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Regional fact sheet - Africa.

At the macroeconomic level, these projected changes present all the more risk to the outlook for economic development, given that the recovery phase that began in 2017 has seen a downturn in 2018 and 2020, in terms of the GDP growth rate. This rate, which should rebound with the completion of energy projects and the resumption of agricultural and mining activities, can only be maintained if the impact of climate variability and change does not compromise national ambitions, among other factors. In Central Africa, a warming of 1°C above the historical average is associated with a reduction of around 0.7 percentage points in GDP growth, ranging from -1.3 to -0.03<sup>8</sup>.

Table 2 shows GDP growth forecasts, and Figure 4 the potential effect of climate change on CAR's projected GDP<sup>9</sup>.

	2017	2018	2019	2020	2021	2022	2023
<b>Growth rate</b> <b>gr</b> <b>rowth rate</b> <b>GDP (%)</b>	4,5	3,8	4,5	1,7	2,1	5	5

Table 2: CAR's GDP growth rate over the five-year period 2017-2021 (Source: MEPC, 2020)



Probability that climate change will reduce GDP per capita in the Central African Republic by :

- More than 10%: 100
- More than 20%: 100
- More than 50%: 99

Figure 4: Economic impact of climate change on the Central African Republic (Source: Stanford, 2021)

<sup>8</sup> AfDB. Climate Change Impacts on Africa's Economic Growth. 2019.

<sup>9</sup> This effect is most apparent in dry years, particularly on agricultural GDP, and in turn on national GDP: Sonwa, D. et al. (2014).

## TRENDS IN EMISSIONS AND REMOVALS OF GREENHOUSE GASES AND SHORT-LIVED CLIMATE POLLUTANTS (SCLP)

GgeCO <sub>2</sub>	3 <sup>ème</sup> National Communication
	Series: 2010-2016
	Reference year: 2010
<b>Energy</b>	5151,99
<b>Agriculture, forestry and other land uses (AFAT)</b>	4244,36
<b>Waste</b>	643,779
<b>Industrial Processes and Product Use (IPUP)</b>	0,078
<b>Overall emissions (excluding forestry absorptions)</b>	10 040,20
<b>Absorptions AFAT</b>	728 896

Table 3: Summary of emissions from the third national communication (Gg CO<sub>2</sub>e)

The table above shows the profile of greenhouse gas emissions (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC) in the following sectors: Energy; Agriculture, forestry and other land uses (AFAT); Industrial processes; Waste. The most significant emissions are in the energy and AFAT sectors, which account for almost 94% of total volumes (see figure below).

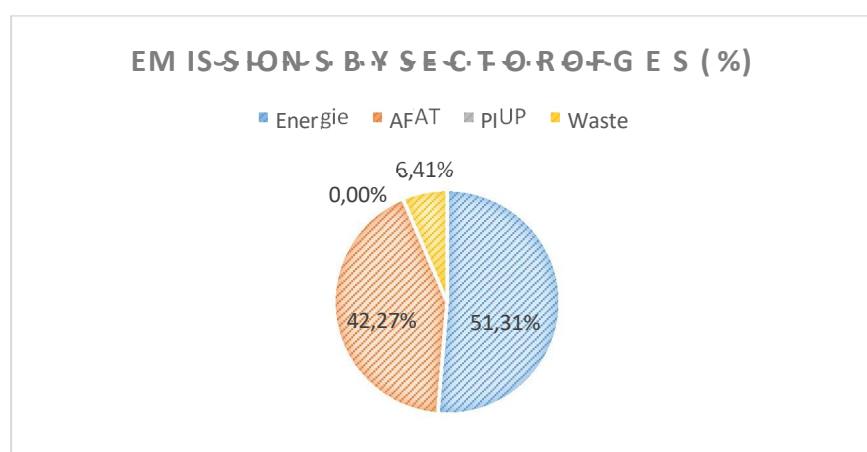


Figure 5: Breakdown of GHG emissions by sector (Source: Third National Communication)

It should be noted, however, that despite its significant emissions, the CAR's forest and grassland ecosystems remain a major carbon sink, with a total sequestration capacity estimated at 728,896 GgeCO<sub>2</sub>.

In the same vein, and based on the hypothesis of a potential reduction in short-term global warming of 0.4-0.5°C by 2050<sup>10</sup> by short-lived climate pollutants (SLCPs)<sup>11</sup>, their inventory was carried out<sup>12</sup>. In addition to greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs), the main sources of emissions of SLCPs are the AFAT and energy sectors. The gases with the highest emissions are, in order of importance: organic carbon (CO), suspended particulates (PM<sub>10</sub>), and to a lesser extent nitrogen oxides (NO<sub>x</sub>), PM 2.5 and non-methane volatile organic compounds (NMVOCs).

	NO <sub>x</sub>	CO	NMVOCS	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	BC	OC	NH <sub>3</sub>	TOTAL
<b>Emissions (t)</b>	10 786	107 740	15 894	527	17 609	11 956	1 996	5 574	1 746	173 833
<b>%</b>	6,21%	61,98%	9,14%	0,30%	10,13%	6,88%	1,15%	3,21%	1,00%	100%

Table 4: Breakdown of PCCDV emissions by source

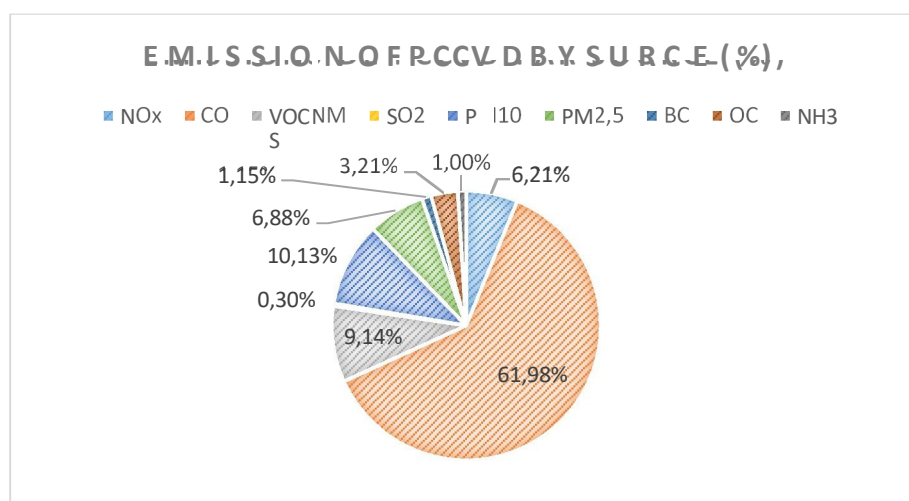


Figure 6: % of PCCVD emissions by source

<sup>10</sup> UNEP & WMO (2011) Integrated Assessment of Black Carbon and Tropospheric Ozone. UNON/publishing Services Section/Nairobi, ISO 14001:2014

<sup>11</sup> These are particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), black carbon (NC), organic carbon (OC), nitrogen oxides (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>) and non-methane volatile organic compounds (NMVOCs).

<sup>12</sup> MEDD (2020) Integrated inventory of short-lived climate pollutants, atmospheric pollutants and greenhouse gases in the Central African Republic

### 3. MITIGATION OF GREENHOUSE GAS EMISSIONS AND CLIMATE POLLUTANTS

#### VISION AND OBJECTIVES

CAR's mitigation vision is to promote low-carbon development by reducing emissions by 10% to 25% by 2030 (unconditional and conditional scenario) compared with the trend scenario. This is broken down into several objectives: (i) the development of renewable energy resources and energy saving; (ii) the promotion of agro-ecology; (iv) the sustainable use of natural resources; and (v) the improvement of the living environment.

#### BAU SCENARIO OR TREND SCENARIO (2010-2030)

The trend scenario or Business as Usual (BAU) scenario for greenhouse gas emissions ( $\text{CO}_2$ ,  $\text{CH}_4$ ,  $\text{N}_2\text{O}$ , HFC) over the 2010-2030 cycle is shown below for the following sectors: Energy; Agriculture, forestry and other land uses (AFAT); Industrial processes; Waste. The CAR's emissions by 2025 and 2030 are 14,141 Ggeq $\text{CO}_2$  and 17,644 Ggeq $\text{CO}_2$  respectively. Sequestration capacity over the same horizons remains high. It is 730,714 Gg $\text{CO}_2$  and 733,607 Gg $\text{CO}_2$  respectively.

As far as PCCVs are concerned, organic carbon (CO) is expected to account for 71% of short-lived climate pollutant emissions.

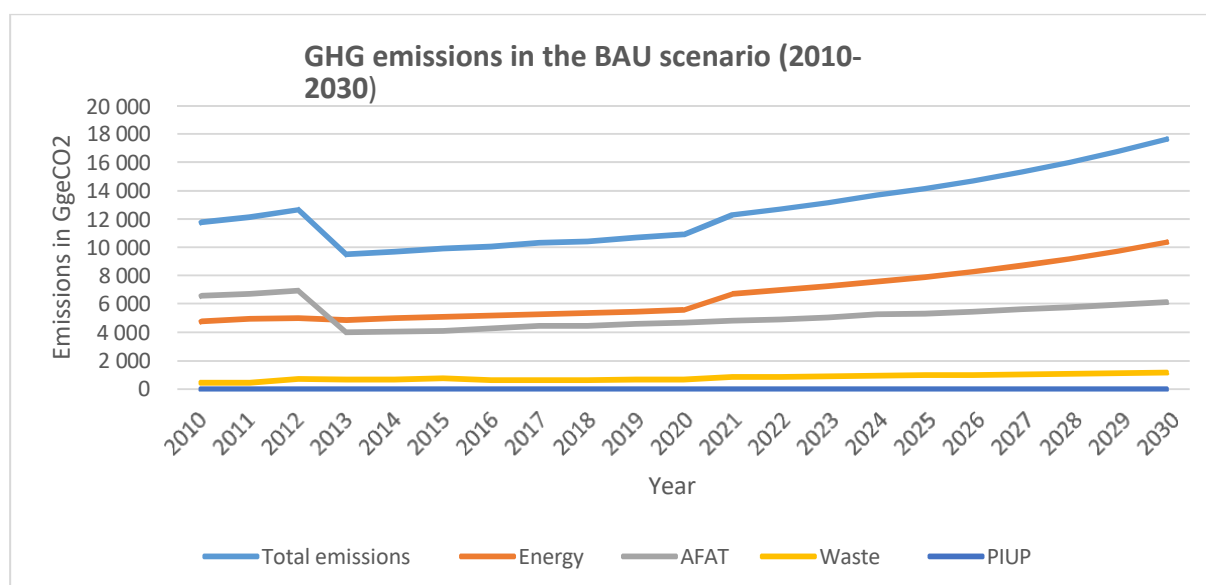


Figure 7: GHG emissions for the BAU scenario (2010-2030)

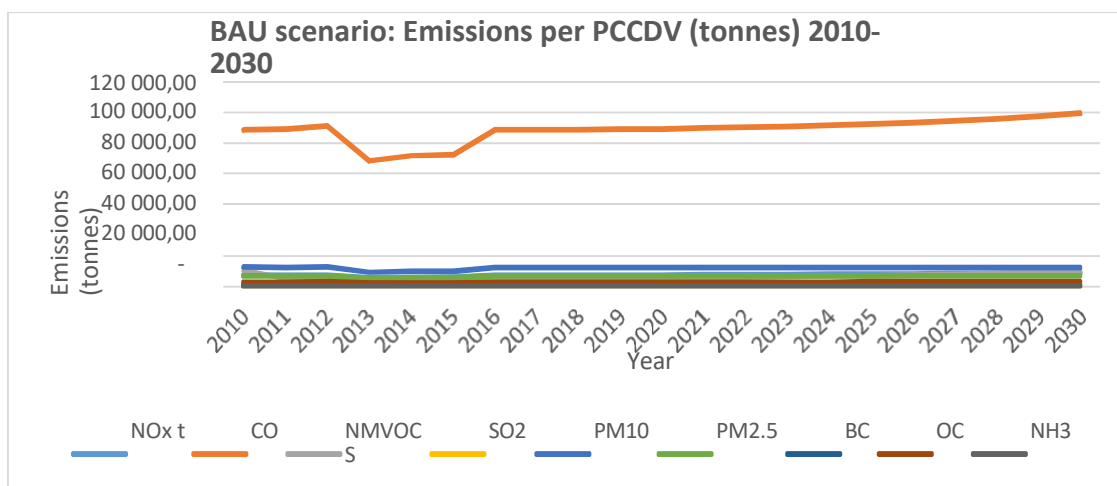


Figure 8: PCCVD emissions - trend scenario (2010-2030)

At sector level, the mitigation measures set out below cover activities for which investment is planned to be granted by the State (unconditional NDC), and activities for which additional investment needs are required (conditional NDC). For all the activities indicated *below*, the NDC will ensure equitable access to economic opportunities between genders and will target in particular young people and indigenous peoples in areas where they are present.

## ENERGY SECTOR

The National Energy Policy Document (DPEN) supports the objective of contributing to economic growth, improving the quality of life while respecting the environment by increasing the rate of access to electricity from 4% to 20% by 2025 and securing the energy supply. This ambition is broken down for each sub-sector: traditional energies, electricity, new and renewable energies, hydrocarbons, energy management and conservation.

In line with these ambitions, the CDN de la RCA is structuring its intervention in the field of energy according to the actions and objectives below.

Traditional energy sub-sector		
	Objectives	Actions planned
Unconditional CDN	Increase charcoal production efficiency by 10% in 2025 and 25% in 2030	Promotion of improved carbonisation techniques: Training; Recovery of industrial processing waste
	Increase the share of coal in final consumption <sup>13</sup> by 4% by 2025 and 12.5% in 2030	
	Penetration of improved stoves in households: 5% in 2025 and 10% in 2025	Improvement of energy efficiency in the use of wood. energy t h r o u g h household use

<sup>13</sup> To replace firewood

	2030 (targets: 50% female heads of household)	improved : Elaboration of prototypes; production and distribution
	Households equipped in 2025 and 2030: Solar lighting: 5% and 50%. Solar cookers: 5% by 2025 LPG: 10% by 2030 (target: 50% female heads of household)	Modernisation of domestic energy: sector study; pilot phase implementation
<b>Conditional CDN</b>	Increase the performance of charcoal production by 10% by 2025 and 25% by 2030  Increasing the share of coal in final consumption by 8% by 2025 and 25% in 2030 <sup>14</sup>	Cf. unconditional CDN
	Penetration of improved stoves in households by 25% in 2025 and 50% in 2030	Cf. unconditional CDN
	2% in 2025 and 15% in 2030 (target: 50% female heads of household)	Reduce the impact of waste on ecosystems by promoting bio-digesters (% recovery of waste from digesters). organic waste)
	Households equipped in 2025 and 2030 : Solar lighting: 20% and 50%. Solar cookers: 5% and 10%. LPG: 25% by 2030	Cf. unconditional CDN

Electricity sub-sector		
	Objectives	Actions planned
<b>Conditional CDN</b>	10 MW by 2030	Construction of hydroelectric micro-power stations: pre-feasibility and feasibility studies, commissioning, management and maintenance
	60 MW by 2030	Construction of the Lobaye hydroelectric power station; pre-feasibility and feasibility studies, commissioning, operation, management and maintenance
	40 MWp by 2030	Construction of solar power plants: pre-feasibility and feasibility studies, start-up, management and commissioning. maintenance

Energy management and conservation sub-sector		
	Objectives	Actions planned
<b>Unconditional CDN</b>	80% penetration rate by 2030 (target: 50% female heads of household)	Promoting energy saving in households through the widespread use of low-energy light bulbs: Study sector; Pilot phase implementation



As a result of all these measures, the CAR will be able to change the reference scenario (or "Business as Usual-BAU" scenario) in the energy sector, respectively by -25% and -25%.

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<sup>14</sup> These percentages include the proportion of unconditional

2.02% and -6.53% in 2025, and -6.34 and -19.89% in 2030, under the unconditional and conditional scenarios (see figure and table below).

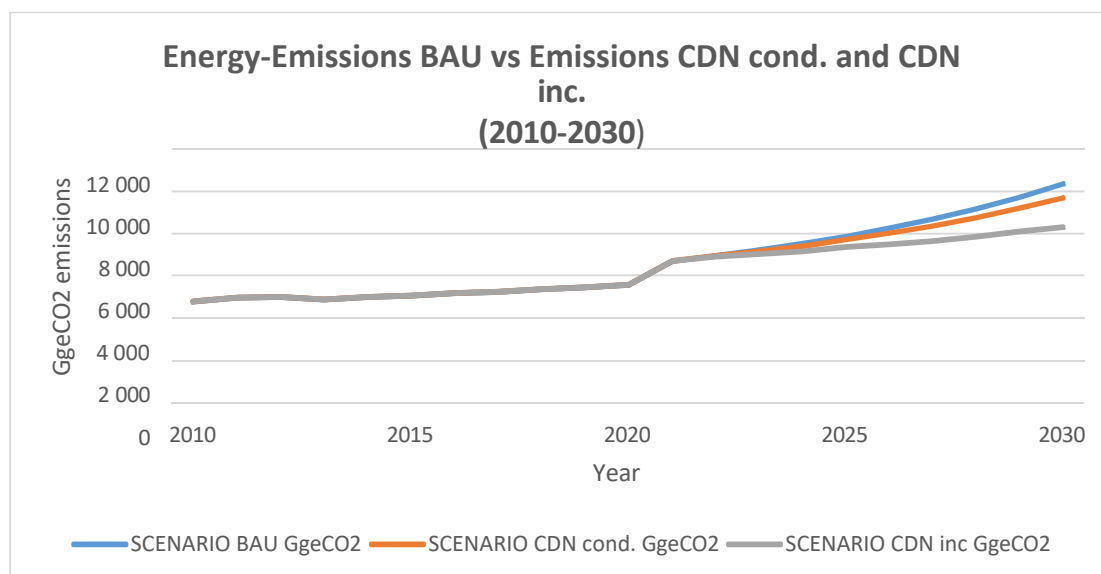


Figure 9: Emissions from the energy sector - trend scenario, unconditional NDC and conditional NDC

ENERGY	Emissions Baseline scenario (GgeCO2)	Unconditional CDN emissions (GgeCO2)	% discount CDN unconditional	Conditional CDN emissions (GgeCO2)	% discount CDN conditional
Horizon 2025	7 874	7 715	-2,02%	7 360	-6,53%
Horizon 2030	10 362	9 705	-6,34%	8 300	-19,89%

## AGRICULTURE, FORESTRY AND OTHER LAND USE (AFAT) SECTOR

The Rural Development, Agriculture and Food Security Strategy (SDRASA) is structured around a vision for 2025 of Central African agriculture that is "productive, profitable, respectful of the environment, based on local initiatives and the gender concept, a creator of wealth, and the conditions for the emergence of a dynamic agricultural private sector". It includes in its programming support for natural resource management and the development and dissemination of sustainable agricultural practices as major thrusts of its policy. The SDRASA is complemented by the Programme National d'Investissement Agricole de Sécurité Alimentaire et Nutritionnelle (PNIASAN - National Agricultural Investment Programme for Food and Nutritional Security), which focuses, among other things, on revitalising the food sectors and developing export sectors (cotton, coffee, oil palm).

In the forestry sector, CAR's ambition is that "by 2035, forest ecosystems and their associated resources will be co-managed to provide the goods and services necessary for peace, sustainable and harmonious development, the conservation of biological diversity and the protection of the global environment". This vision is reflected in the National REDD+ Investment Framework 2020-2025, which aims to support the country in the economic and social development of the AFAT sector while ensuring that impacts on forest ecosystems are avoided, minimised and compensated for.

The objectives and mitigation measures in these areas are as follows:

Agriculture sub-sector		
	Objectives	Actions planned
Unconditional CDN	Reduce the practices by 15% by 2025	Encourage sustainable agriculture by promoting agro-ecology: local diagnostics, introduction of new technical and scientific reference systems, etc. new experiments
	50,000 ha in 2030, based on agroforestry; including maintaining of heritage agroforestry from indigenous populations	Increase the capacity of sequestration of carbon from ecosystems by promoting orchards and palm groves family sustainable
	15,000 ha by 2030 (10,000 ha of coffee plantation, 5,000 ha cocoa), based on agroforestry (target: 50% female heads of household)	Increase the carbon sequestration capacity of agricultural systems by reviving deforestation-free agroforestry deforestation-free, agronomically efficient agroforestry coffee and cocoa farming, economic and environmental
Conditional CDN	Reduce the practices by 60% by 2030	Cf. unconditional CDN
	100,000 ha by 2030, based on agroforestry	Cf. unconditional CDN
	15,000 ha by 2030 (10,000 ha of coffee plantation, 5,000 ha cocoa), based on agroforestry	Cf. unconditional CDN

Forestry and Land Use sub-sector		
	Objectives	Actions planned
Unconditional CDN	12.5% of urban households with planted at least 3 trees in their plot by 2030 (targets: 50% of women heads of household)	Support at development from the urban and peri-urban forestry (FUPU)
	Make 12.5% of wood used for heating renewable by 2030	Development of agroforestry combining wood energy and agricultural production; Establishment of plantations forestry and agroforestry in suitable areas
	Reduce uncontrolled fires by 6.25% by 2025 and 15% by 2030	Installation and maintenance of firewalls
	Restore 25% of post-mining sites annually by 2030	Reduce the impact of mining on national forest ecosystems through the promotion of good mining practice

	Preserve 20% of the sequestration capacity of APDS and PNMB by 2030	Capitalising on the carbon potential of the Dzangha-Sangha protected areas (APDS) and the Mbaéré National Park Bodingué (PNMB)
<b>Conditional CDN</b>	50% of urban households having planted at least 3 trees on their plot	Cf. unconditional CDN
	Make renewable firewood harvest in 2030 25% of Cf . unconditional CDN	
	Reduce uncontrolled fires by 25% in 2025 and 60% by 2030	Cf. unconditional CDN
	Restore 50% of sites post mining annually in 2030	Cf. CDN unconditional
	Preserve 80% of the capacity of Cf sequestration of APDS and PNMB in 2030	. unconditional CDN

The actions thus taken, in line with the priority orientations defined in CAR's sectoral planning and programming instruments in the areas of agriculture, forestry and land use, would make it possible to reduce greenhouse gas emissions according to the unconditional scenario by -2.76% and -4.33% respectively in 2025 and 2030; and according to the conditional scenario by -11.03% and -17.30% respectively in 2025 and 2030 compared with the trend scenario (see figure and table below).

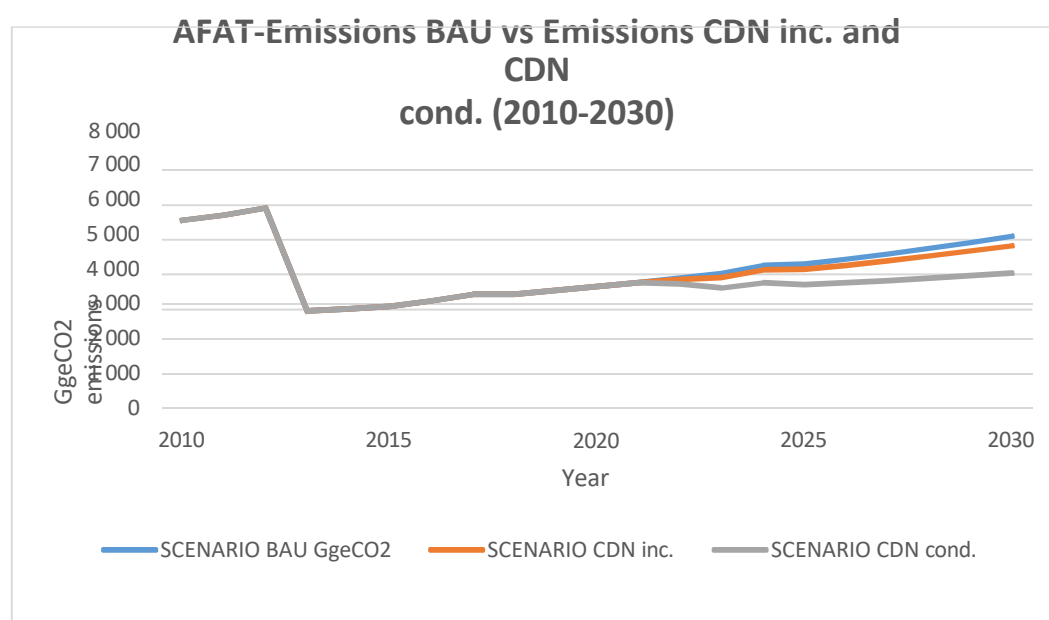


Figure 10: AFAT sector emissions - trend scenario, unconditional NDC and conditional NDC

AFAT/Emissions	Emissions Baseline scenario (GgeCO2)	Unconditional CDN emissions (GgeCO2)	% discount CDN unconditional	CDN issues conditional (GgeCO2)	% discount CDN conditional
Horizon 2025	5 293	5 147	-2,76%	4 709	-11,03%

Horizon 2030	6 106	5 842	-4,33%	5 049	-17,30%
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## WASTE SECTOR

The national water and sanitation strategy document has several sub-objectives for the sanitation sub-sector, including improving the living environment and health of the population; developing action strategies for hygiene and solid, liquid and excreta waste in rural and urban areas<sup>15</sup>. This ambition is being pursued as part of the National Water Policy (2020-2030), one of whose strategic axes is "universal access to water and sanitation by 2030". In line with this approach, the rational and sustainable management of waste remains a major challenge for municipalities in general, and urban municipalities in particular, in a context where the urban population is estimated to be growing at 41.4% of the population, and is expected to reach 48% and 60% respectively by 2030 and 2050.

In this area, the objectives and mitigation measures relate to the treatment and reuse of municipal waste. Examination, processing and analysis of the proposed mitigation measures show that, in the context of the CAR, they are either (i) likely to generate methane emissions that are additional to the emissions of the trend scenario, or (ii) the percentage reduction remains marginal (less than 1%) compared to the costs incurred by the action. No measures are therefore proposed under this component.

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## INDUSTRIAL PROCESSES AND PRODUCT USE SECTOR (PIUP)

The legal framework for national climate action is based mainly on Law No. 07/018 of 28 December 2007 on the Environment Code, which includes air protection as one of its priority interventions. The country has also ratified the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol, which aims to reduce and completely eliminate substances that deplete the ozone layer.

In light of the country's commitments in this area, the NDC's mitigation measures are as follows:

Ozone sub-sector		
	Objectives	Actions planned
<b>CDN</b>	Reduce the use of fluorinated gas appliances by 6.25% in 2025 and 12.5% in 2030.	Reducing fluorinated gas emissions
<b>Conditional CDN</b>	Reduce the use of fluorinated gas appliances by 25% in 2025 and 50% in 2030.	Reducing fluorinated gas emissions

Implementing the actions by 2025 and 2030 will enable CAR to reduce greenhouse gas emissions, in particular hydrofluorocarbons (HFCs), according to the unconditional scenario by -3.91% and -6.04% in 2025 and 2030 respectively; and according to the conditional scenario by -15.65% and -4.00% in 2025 and 2030 respectively.

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<sup>15</sup> Solid waste management is a municipal responsibility

24.16% respectively in 2025 and 2030 compared with the trend scenario (see figure and table below).

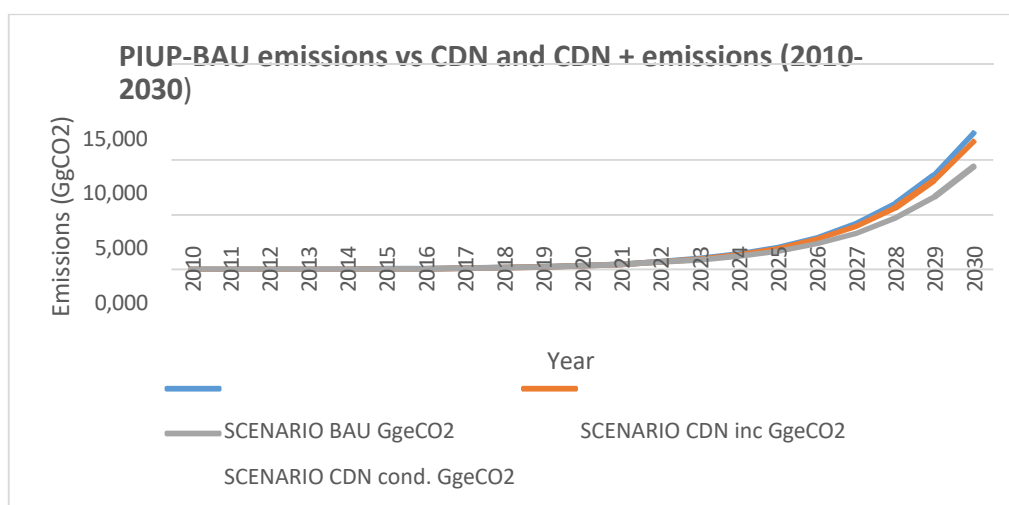


Figure 11: Emissions in the PIUP sector-trend scenario, unconditional CDN and conditional CDN

PIUP	Emissions Baseline scenario (GgeCO <sub>2</sub> )	Unconditional CDN emissions (GgeCO <sub>2</sub> )	% discount CDN unconditional	Conditional CDN emissions (GgeCO <sub>2</sub> )	% discount CDN conditional
Horizon 2025	2,026	1,947	-3,91%	1,709	-15,65%
Horizon 2030	12,466	11,713	-6,04%	9,455	-24,16%

#### GLOBAL EMISSIONS AND REMOVALS IN 2025 AND 2030: TREND SCENARIO, UNCONDITIONAL CND AND CONDITIONAL CND

Taken together, the aggregate measures would lead CAR to a level of greenhouse gas reduction under the unconditional scenario of -9.03% and -11.82% in 2025 and 2030 respectively. Assuming support from the international community, these reductions will reach -14, 64% and -24.28 in 2025 and 2030 respectively.



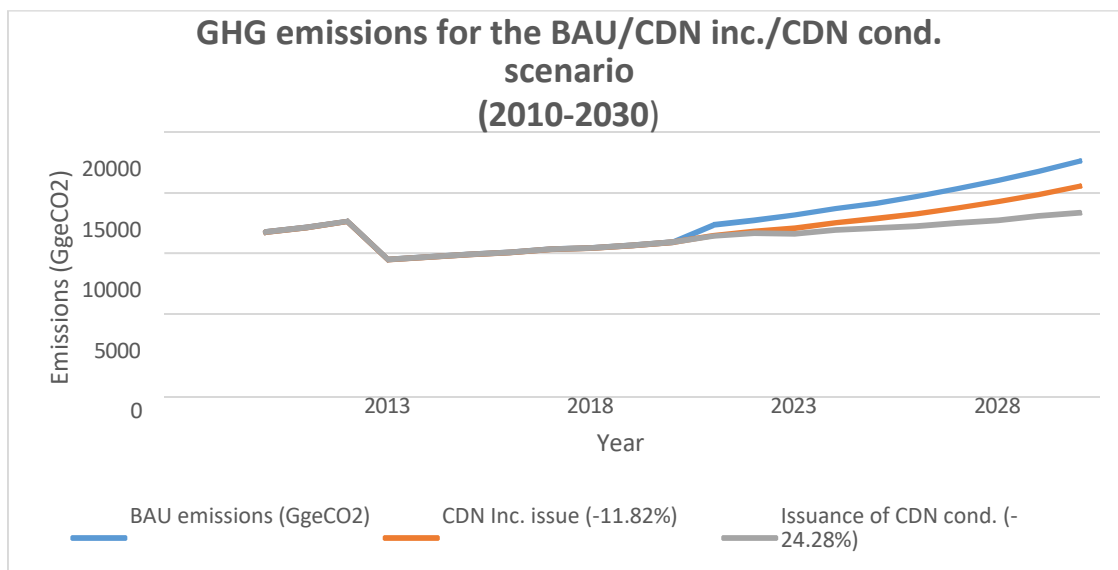


Figure 12: Global emissions-trend scenario, unconditional NDC and conditional NDC

Emissions	Emissions Baseline scenario (GgeCO2)	Unconditional CDN emissions (GgeCO2)	% discount CDN unconditional	Conditional CDN emissions (GgeCO2)	% discount CDN conditional
Horizon 2025	14 141	12 864	-9,03%	12 070	-14,64%
Horizon 2030	17 644	15 558	-11,82%	13 359	-24,28%

The measures taken in this way have an effect both on the reduction in greenhouse gas emissions and on the improvement in the level of carbon sequestration by biomass and soils. In 2030, this absorption capacity will be 735,140 GgCO<sub>2</sub> and 739,086 GgCO<sub>2</sub> respectively under the unconditional and conditional scenarios.

Absorptions	CO2 sequestered Trend scenario (GgeCO2)	CO2 sequestered CDN unconditional (GgeCO2)	% increase in unconditional CDN	CO2 sequestered CDN conditional (GgeCO2)	% increase CDN conditional
Horizon 2025	730 714	732 036	+0,18%	735 763	0,69%
Horizon 2030	733 608	735 140	+0,21%	739 086	+0,75%

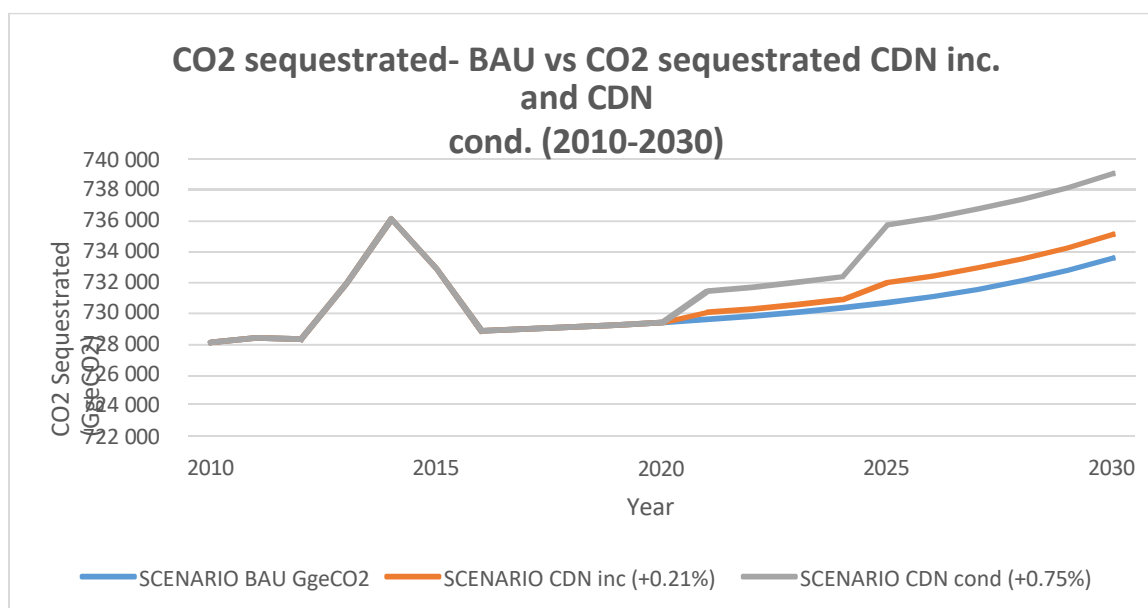


Figure 13: Global removals-Trend scenario, unconditional NDC and conditional NDC

The emission reductions by gas for SCCVDs are as follows.

	Horizon 2025					Horizon 2030				
	Cumulati ve emissions (tonnes)	CDN	%	CDN+	%	Cumulati ve emissions (tonnes)	CDN	%	CDN+	%
NOx	61 685	58440	-5,26	57346	-7,03	68480	50039	-26,93	44945	-34,37
CO	577 232	537033	-6,96	533620	-7,56	614099	382793	-37,67	361758	-41,09
NMVOCS	10388	97569	-2,81	95 783	-4,59	117047	101052	-13,67	90019	-23,09
SO2	2592	2343	-9,63	2341	-9,69	2573	1158	-54,97	1150	-55,31
PM10	94993	88804	-6,52	87944	-7,42	98330	63212	-35,71	57920	-41,10
PM2.5	67208	63659	-5,28	62816	-6,53	70846	50821	-28,27	45638	-35,58
BC	12101	11760	-2,83	11517	-4,83	13048	11102	-14,91	9628	-26,21
OC	31862	30312	-4,86	29886	-6,20	33922	25210	-25,68	22572	-33,46
NH3	10831	10574	-2,37	10358	-4,37	11829	10389	-12,17	9040	-23,57

Table 5: Reduction in PCCDV emissions under unconditional and conditional scenarios

## 4. ADAPTING TO THE EFFECTS OF CLIMATE CHANGE

### VISION AND OBJECTIVE

The CAR's national vision on climate change is that "by 2030, the Central African Republic will be part of a dynamic of sustained, equitable and sustainable socio-economic development, by integrating the challenges of climate change into all social and productive sectors, which will improve the general well-being of its population".

In line with this vision, and consistent with the adaptation objectives of the Paris Agreement, the SDGs and the Government's priorities, the adaptation objective is "to improve the resilience of communities and ecosystems in the socio-economic sectors most vulnerable to the adverse effects of climate change by 2030".

### IMPACTS AND ADAPTATION MEASURES

At the national level, vulnerability is more marked in the areas listed as government priorities in the 2017-2021 National Recovery and Peacebuilding Plan (RCPCA). These are: agriculture, energy, forestry, water resources, health, regional planning, infrastructure and housing. It is exacerbated by political insecurity and inequality, in a context marked by growing gender inequality, whose index is considered to be one of the highest in the world. The country is ranked 159th out of 162 countries in the United Nations' 2019 Gender Inequality Index (GII). This inequality has increased over the last few decades as a result of successive crises, with the index rising from 0.743 in 1995 to 0.680 in 2019.

The table below details the sectoral impacts and vulnerabilities in relation to the expected effects of climate change.

Horizon	2030 <sup>16</sup>								
Temperature variation (°C)	0.2°C	0.4	0.6	0.8	1	1.2	1,4	1.6	1.8
Precipitation anomaly (mm)	-20	-15	-10	-5	0	+5	+10	+15	+20
National economy	Decline in GDP from -2.6% to -3.4% in 2030 <sup>17</sup> . Worsening incidence of poverty.								
Agriculture and food safety	<ul style="list-style-type: none"> <li>Increase in land degradation to levels &gt; 1.3% of the national territory/year<sup>18</sup>, due to the exposure of ferrallitic soils (75%), which are shallow and vulnerable to erosion and cultivation practices.</li> <li>Decrease in productivity (up to 20%) of sesame, sorghum, groundnuts and millet in the dry projection,</li> </ul>								

<sup>16</sup> The proposed presentation does not mean that the temperature and precipitation values correspond on the same axis.

<sup>17</sup> AfdB. Climate Change Impacts on Africa's Economic Growth. 2019. RCP 2.6 and RCP 8.5 scenarios

<sup>18</sup> Rate of deterioration between 2000 and 2010

	<p>Increase in cassava productivity under a wet projection by 2025,</p> <ul style="list-style-type: none"> <li>• Increase in the severely food-insecure population to high levels &gt; at the rate of 30 to 50% of the population<sup>19</sup>.</li> </ul>
Forestry	<ul style="list-style-type: none"> <li>• Increase in the loss of forest area &gt; 0.1% per year</li> </ul> <p>Forest area shrinks by 15 Assuming an increase of 4°C</p>
Water Resources	<ul style="list-style-type: none"> <li>• Drawdown of dams supplying hydroelectric power stations (e.g. Boali)</li> <li>• Increase in the rate of households without access to basic water services (&gt;62.5%), due to the reduced reliability of underground and surface water sources during prolonged dry spells.</li> </ul> <p>Increase in the variability of flows, Intensification of high flows, and Reduction in low flows. Hydroelectric benefits</p>
Energy	<ul style="list-style-type: none"> <li>• Increased frequency and intensity of heavy rainfall likely to have an impact on electrical infrastructure.</li> </ul>
Health	<ul style="list-style-type: none"> <li>• Increase in conditions conducive to disease (typhoid, respiratory infections, meningitis, diarrhoeal diseases, malaria) and transfer to other regions new areas</li> </ul>
Infrastructure and housing/ Spatial planning	<ul style="list-style-type: none"> <li>• Negative impact of annual damage and losses caused by recurrent flooding on GDP: Average annual damage and losses estimated at XAF 3, 1 billion<sup>20</sup> (USD 7 million).</li> </ul>

Table 6: Impacts and vulnerabilities by sector

## SPECIFIC OBJECTIVES AND ADAPTATION MEASURES

To achieve the overall adaptation objective, intermediate objectives and measures have been identified. They are aligned with the SDGs, the RCPCA, the National Adaptation Plan and the country's third national communication.

### OBJECTIVE 1: TO ENSURE THE SECURITY OF AGRO-SYLVO-PASTORAL SYSTEMS AND WATER RESOURCES BY SEIZING OPPORTUNITIES ASSOCIATED WITH PROJECTED CLIMATIC VARIATIONS

Alignment with the NAP: National Programme for Agricultural Investment, Food Security and Resilience to Climate Change

Option	Targets/Reference year: 2010	Actions and measures to achieve the targets
<b>Agriculture and Livestock</b>		
Development of sustainable, intensive and diversified agriculture, and promoting management actions	<ul style="list-style-type: none"> <li>• Improvement and dissemination of production of food crops,</li> </ul>	To disseminate high-performance crop-growing packages likely to bring about a lasting improvement in

<sup>19</sup> CPI averages between 2016 and 2021.

<sup>20</sup> Joint needs assessment report (September 2009) on urban flooding in Bangui

sustainable land management involving young people, women and indigenous peoples	taking into account climate projections (5 by 2030: Manioc (+26%), Groundnuts (+13%), Maize (+33%), Sorghum/Millet (+29.7%), Sesame (+23%).	productivity and environmental protection in a context of climate change (resistant varieties)
	<ul style="list-style-type: none"> <li>By 2030, reduce the loss of land productivity by 50 (target: 50% female owners)</li> </ul>	Integrate the neutrality of land degradation (NDT) into national priorities; ensure the integration of agriculture and livestock farming in degraded cultivated areas; promote agri-forestry systems for sustainable soil management; ensure the reforestation of areas degraded by fodder crops in degraded areas; ensure the integration of agriculture and livestock farming in degraded cultivated areas; promote agri-forestry systems for sustainable soil management; ensure the reforestation of areas degraded by fodder crops in degraded areas. degraded pastures.
	<ul style="list-style-type: none"> <li>Reduce slash-and-burn cultivation practices by 60% by 2030</li> </ul>	Cf. Attenuation-AFAT
Developing agricultural research to adapt to climate change	<ul style="list-style-type: none"> <li>By 2030, develop food crop varieties adapted to water stress and/or temperature in the central and northern regions of the CAR, for the benefit of the most vulnerable communities: cassava; groundnuts; maize; rice; sesame (at least 10 varieties)</li> </ul>	Technical capacity building (varietal development, use of impact models to simulate productivity and production per scenario); ICRA material capacity building (simulation models, laboratories, seed multiplication centres).
Prevention and management of the effects of exceptional climatic events on the agro-sylvo-pastoral system	<ul style="list-style-type: none"> <li>Set up and make operational by 2030 a system for preventing food crises associated with climate variability and change (early warning system including an information system)</li> </ul>	Existence of a functional hydro-meteorological and seasonal forecasting system
Improving the climate resilience of communities and traditional pastoral systems	<ul style="list-style-type: none"> <li>Between now and 2030, seven new land-use plans (for the seven regions of the CAR) will redefine, among other things, livestock farming areas and transhumance corridors, in line with variability and changes in climate. current and projected climate</li> </ul>	Drawing up natural resource zoning adapted to current and projected climate zoning, Rehabilitating and building water reservoirs in certain livestock farming areas
	<ul style="list-style-type: none"> <li>By 2030, improve the level of sedentarisation of transhumant herders and reduce the risks associated with climate variability and change, by increasing the area under fodder crops in forested areas and ensuring monitoring. zootechnical and veterinary</li> </ul>	Installation of fodder crop plots, improved and maintained water points; Ensuring the framework for supplying pastoral organisations with veterinary vaccines and medicines; Supporting vulnerable households to develop IGAs.

Option	Targets/Reference year: 2010	Actions and measures to achieve the targets
<b>Forestry</b>		
Restoring deforested landscapes, by reforesting with multi-species species to reduce the sensitivity and exposure of forests to climatic hazards	<ul style="list-style-type: none"> <li>By 2030, restore and maintain 1,000,000 ha, including degraded forest landscapes in mining areas</li> </ul>	Ensuring reforestation of degraded areas through urban, peri-urban and community forestry; Reducing pressure on the use of wood as an energy source by modernising domestic energy (see mitigation).
Regulation of small-scale timber and energy wood harvesting and measures to reduce pressure on resources	<ul style="list-style-type: none"> <li>A master plan for the sustainable use of Bangui's wood-energy supply has been defined, and the implementing regulations drawn up by 2025.</li> <li>Make 25% of firewood harvesting renewable in 2030</li> </ul>	<ul style="list-style-type: none"> <li>Identification of Bangui's wood-energy supply basins</li> <li>Support for the sustainable management of existing supply basins (see AFAT mitigation)</li> </ul>
	<ul style="list-style-type: none"> <li>25% penetration of improved stoves in households by 2025 and 50% by 2030</li> <li>Increase charcoal production efficiency from 10% to 25% by 2030</li> <li>LPG: 10% by 2030</li> </ul>	<ul style="list-style-type: none"> <li>Improving the energy efficiency of wood energy use (see Energy Mitigation)</li> <li>Promoting LPG as a substitute for wood energy</li> </ul>
Promoting agroforestry to reduce climate risks and diversify economic options	<ul style="list-style-type: none"> <li>Planting of 100,00 ha by 2030 (50,000 ha of orchards, 20,000 ha of palm groves 30,000 ha of hardy plants (date, shea, tamarind))</li> </ul>	Cf. Mitigation-AFAT Capacity building technical and material aspects of the parties Establish incentives: quality seeds, tree nurseries, training materials, etc. extension services, identification of product markets.
Supporting and formalising the sector and the forest products circuit non-timber forest products (NTFPs) to diversify sources of supply for foodstuffs, in a situation of climate crisis	<ul style="list-style-type: none"> <li>Increase the production of NTFPs for food (shea butter, pepper wild, Gnetum africanum, Dorstenia sp, caterpillars, by 30% by 2030 (targets: 50% female heads of household</li> </ul>	Information, training, Installation propagation nurseries and transformation units; setting up setting up collection depots and storage; Organisation of the NTFP marketing

Alignment with the NAP: Integration of climate change adaptation into national and regional water resource management; Strengthening the resilience of rural and urban areas to climate change through better management of community water resources.

Option	:	Actions and measures
	for	2010 Target achievement
<b>Water Resources, Water and Sewerage Services</b>		
Improving the environment Analyses of vulnerability sector, in National Water development of current and future vulnerability of change : the climate	governance of the water and line with the Policy water resources to climate vulnerability master plan	Develop, by 2025, strategic-sanitation ; Page 28

Establishment of a monitoring system - By 2025, develop monitoring system to ensure surface water resources and context of variability and and climate change	establish a system monitoring water quality - (SQE)	a maintenance and renewal and the safety of <sup>21</sup> and water uses (hydrometric stations, of piezometers, establishing protocols for assessing the quality of water • Tools for data processing and analysis by public services
Capacity municipalities and recovery.	building- (technical managers) development of municipalities training modules on collection, in recovery; implementation of solid waste recycling recycling  equip them with the equipment needed	By 2025, train 30% of ; institutional (technical managers); collection, management and solid waste training, acquisitions, necessary
Development of drinking associated with the promotion of the efficiency of drinking the and	water the population using SODECA services major towns; Establishment of drinking water supply systems the use of water by urban areas (Bangui and secondary centres) to cope with the risk of drought	Improving the proportion of ; Extension of the network in water supply to , boreholes 75% of the rural population.

## OBJECTIVE 2: TO ADAPT THE REGION AND ITS ENERGY SYSTEMS TO CURRENT AND FUTURE CLIMATE CHANGE

Option	Targets/Reference year: 2010	Actions and measures to achieve the targets
<b>Regional planning</b>		
Shaping the use of land and natural resources through a legal and regulatory framework that takes account of the current and future climate	<ul style="list-style-type: none"> <li>1 National Spatial Planning Scheme (SNAT) and 20 pilot local spatial planning schemes, integrating environmental issues by 2025</li> </ul>	Participatory mapping of uses and usage rights; Technical studies on land potential and use; Geo-referenced database of risks and specific resources

<sup>21</sup> Availability of resources in sufficient quantity and quality to guarantee socio-economic development, livelihoods, health and ecosystems



	<ul style="list-style-type: none"> <li>The land code and the land code - Review and harmonisation of the legal framework adopted by land code; Make the texts adapted and applicable in the CC context</li> </ul>
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Option	:	Actions and measures
for		2010 Target achievement
<b>Energy</b>		
Promotion of Improved wood waste from sector forestry	carbonisation- Cf. mitigation traditional energy sub-	
Rural electrification-	See mitigation Electricity sub-sector	
Regulation and artisanal logging and energy wood	combating- See Adaptation Forestry sub-sector	
Promote the reforestation of degraded by  for use as a wood energy	areas- Cf. Adaptation Sub-sector forest-growing plants	

**OBJECTIVE 3: TO INFORM AND PREPARE INFRASTRUCTURES, HABITATS AND HEALTH SYSTEMS FOR CLIMATE RISKS, BY IMPROVING AND PRODUCING EVIDENCE IN THESE AREAS**

Option	Targets/Reference year: 2010	Actions and measures to achieve the targets
<b>Housing and Infrastructure</b>		
Improving knowledge of the vulnerability of housing and infrastructure and identifying adaptation options	<ul style="list-style-type: none"> <li>By 2025, in-depth vulnerability assessments are carried out and incorporated into sectoral planning</li> <li>By 2025, a participatory action plan for the housing and infrastructure sectors in adaptation planning at national level is drawn up, and operational</li> </ul>	Climate change modelling; assessment of risks, impacts and vulnerabilities, and of adaptation options; integration into sectoral planning
Promotion of a sustainable housing construction model, linked to the sedentarisation of the indigenous AKA populations in a climate change context	<ul style="list-style-type: none"> <li>Construction of pilot habitats</li> </ul>	Free, Prior and Informed Consent with Aboriginal people on sedentarisation and sustainable habitats

Improving stormwater drainage systems to anticipate the effects of recurrent flooding in the most vulnerable towns

- By 2030, improve the network by 25%.

Drainage infrastructure, restructuring, relocation.

Option	Targets/Reference year: 2010	Actions and measures to achieve the targets
<b>Public health</b>		
Improve knowledge of vulnerability of the health sector to climate change and identifying options adaptation	<ul style="list-style-type: none"> <li>By 2025, assessments of vulnerability are carried out and capitalised on in the sectoral planning</li> </ul>	Modelling change risk assessment, impacts and vulnerabilities, and adaptation options; integration in sectoral planning
Promotion of Hygiene and basic sanitation	<ul style="list-style-type: none"> <li>By 2030, implementation of Total Sanitation Piloted by Communities (ATPC) in 500 villages</li> </ul>	Capacity building for actors and harmonization of the ATPC approach
Development of a watch to prevent and combat against epidemics and diseases climate-sensitive (malaria, cholera, meningitis, etc.).	<ul style="list-style-type: none"> <li>By 2030, establish a system information and warning system climate-sensitive diseases and epidemics</li> </ul>	Identify the most vulnerable areas vulnerable people; Put in place tools for processing and analysing RISK DATA and environmental trends epidemiological data; Identify or Establish a system for distributing information

## CROSS-CUTTING MEASURES

Alignment with the NAP: Implementation of an integrated early warning system

Option	Targets/Reference year: 2010	Actions and measures to achieve the targets
<b>Cross-cutting measures</b>		
Modelling change and climate scenarios for the CAR	<ul style="list-style-type: none"> <li>By 2025, projections detailed climatic data based on the most important information (AR6) are designed to CAR</li> </ul>	Institutional support for instrumentation and production climate information
Disaster risk monitoring, rapid post-disaster needs assessment (PDNA) and operations management	<ul style="list-style-type: none"> <li>By 2030, a multi-hazard early warning system (bushfires, floods, drought) is in place and operational</li> <li>By 2030, a multi-sector disaster management system will be in place, coordinated by the DGPC</li> </ul>	Strengthening the technical and material capacities of the DGPC (training and equipment); Setting up an intersectoral risk management platform
Special adaptation programme for indigenous peoples	<ul style="list-style-type: none"> <li>By 2030, 50% of indigenous communities initially targeted have seen their ability to adapt to climate change</li> </ul>	Specific needs assessments and FPIC, strengthening practices CC-resilient agricultural systems Water supply, housing construction sustainable exploitation of

	reinforced	NTFPS.
Climate Education	<ul style="list-style-type: none"> <li>By 2025, ensure that basic notions of change are integrated into the primary and secondary school curricula. climatic</li> </ul>	Capacity building for teacher-researchers, Curriculum development, Validation, Testing, Implementation
Mobilising resources	<ul style="list-style-type: none"> <li>By 2030, mobilising domestic financing necessary for the implementation of CDN and financing conditional exterior</li> </ul>	<p>Formulating a plan investment and</p> <p>Capacity building on climate finance</p>

## 5. MEANS OF IMPLEMENTATION

### FINANCING REQUIREMENTS

The financing needs of the NDC over the decade 2021-2030 are estimated at \$1.764 billion, including \$1.321 billion for mitigation and \$443.872 million for adaptation. CAR's contribution, from its domestic resources, is \$280.44 million (or 16%). The expected contribution from international partners is \$1.483 billion (84%).

### ATTENUATION

Sector	Unconditional Cost (Millions \$)	Conditional Cost (Millions \$)	Total cost (Millions \$)
<b>Energy</b>	58	476	534
<b>AFAT</b>	178	606	784
<b>PIUP</b>	0,29	0,15	0,44
<b>Cross-cutting measures</b>	0,23	2,07	2,3
<b>TOTAL</b>	<b>236</b>	<b>1084</b>	<b>1321</b>

### ADAPTATION

Sector	Unconditional Cost (Millions \$)	Conditional Cost (Millions \$)	Total cost (Millions \$)
<b>Agriculture and livestock</b>	12,377	111,396	123,774
<b>Forestry</b>	0,0451	22,524	22,570
<b>Water resources, water and wastewater services</b>	13,05	117,45	130,5
<b>Regional planning</b>	0,187	1,689	1,876
<b>Energy</b>	Cf Mitigation	Cf Mitigation	Cf Mitigation
<b>Housing and Infrastructure</b>	8,22	73,98	82,2
<b>Public health</b>	0,15	1,35	1,5
<b>Cross-cutting measures including communication</b>	8,332	74,995	83,328
<b>TOTAL</b>	<b>44,387</b>	<b>399,484</b>	<b>443,872</b>

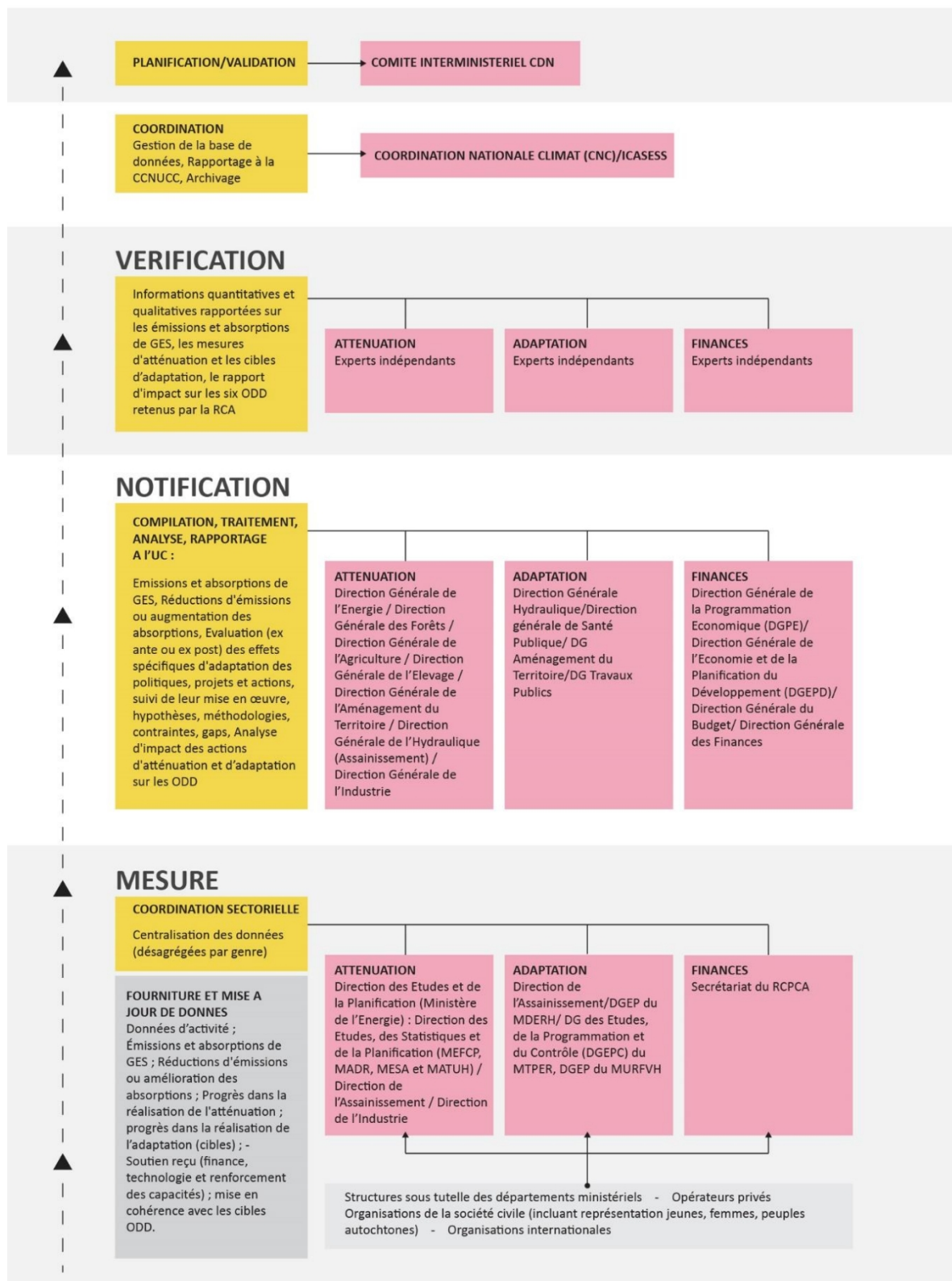
## TECHNOLOGY NEEDS AND CAPACITY BUILDING

The implementation of certain adaptation and mitigation actions requires the use of technologies. Technology transfer in this area will include both capacity building and the installation of equipment.

Component	Technology needs	Need for capacity building
<b>Attenuation</b>	<ul style="list-style-type: none"> <li>Cogeneration technology (biogas, wood and wood by-products)</li> </ul>	Using geospatial technologies to monitor ecosystems
	<ul style="list-style-type: none"> <li>Bio methanisation technology</li> </ul>	Conservation tillage Agroecology
	<ul style="list-style-type: none"> <li>Photovoltaic solar technology</li> </ul>	Management of persistent organic pollutants (POPs)
	<ul style="list-style-type: none"> <li>Solar field connected to the domestic grid ;</li> </ul>	Management of industrial standards
	<ul style="list-style-type: none"> <li>Hydroelectric technology</li> </ul>	Full definition of the baseline for adaptation and mitigation measures
	<ul style="list-style-type: none"> <li>Large power station</li> </ul>	
	<ul style="list-style-type: none"> <li>Improving the energy efficiency of service equipment (pumps, generators, etc.) and recovery of energy produced but not consumed</li> </ul>	
	<ul style="list-style-type: none"> <li>Mini and micro power stations</li> </ul>	
	<ul style="list-style-type: none"> <li>Carbonisation technology based on improved MAGE ovens</li> </ul>	
	<ul style="list-style-type: none"> <li>Metal engineering (improved fireplace, solar cooker)</li> </ul>	
<b>Adaptation</b>	Non-timber forest products (NTFPs): processing technology and conservation of wild pepper	Agroforestry
	Meteorological instrumentation	Climate scenarios and projections Conducting vulnerability assessments
	Simplified non-tillage technology or Simplified Cultivation Techniques (TCS)	Development of curricula integrating climate change at primary and secondary level
	Drought-resistant crops	
	Equipment and tools for monitoring bushfire alerts using remote sensing	

## 6. MEASUREMENT, NOTIFICATION AND VERIFICATION (MNV) MECHANISM

The proposed VNG system covers mitigation, adaptation and finance. It integrates across the board the MDGs (CAR has selected six priority MDGs to monitor: 4, 8, 10, 13, 16 and 17), technology transfer and capacity building.





## 7. Information to facilitate clarity, transparency and understanding<sup>22</sup>

<b>1.</b>	<b>Quantifiable information on the reference point (including, where applicable, a base year)</b>	
(a)	<i>Reference year(s), base year(s), reference period(s) or other starting point(s)</i>	Reference year for emission projections: 2010 Reference year for BAU emission target: 2030
(b)	<i>Quantifiable information on the reference indicators, their values during the reference year(s), reference years, reference periods or other starting points and, where applicable, the target year.</i>	The projected level of emissions in 2030 is 17,643 GgeCO <sub>2</sub> .
(d)	<i>Target relative to the benchmark indicator, expressed numerically, for example as a percentage or amount of the reduction</i>	The reduction in GHG emissions is 24.28% compared with the baseline (BAU) in 2030.
(e)	<i>Information on the data sources used to quantify the reference point(s)</i>	The CAR's third national communication was used to quantify the GHG baseline.  The RCA's integrated inventory of short-lived climate pollutants was used to quantify the level of reference for short-lived climate pollutants (PCCDV)
(f)	<i>Information on the circumstances in which the country Party may update the values of the benchmark indicators</i>	The BAU scenario has been updated on the basis of the final data from the latest available inventories (GHG and LHCC). CAR plans to update the GHG inventory in its first biennial report, scheduled for 2024. An emissions measurement, reporting and verification (MRV) tool will be developed and used to update the inventory. The reference indicators may change following the updating of the inventory. up to date.
<b>2.</b>	<b>Deadlines and/or implementation periods</b>	
(a)	<i>Timetable and/or implementation period, including start and end dates, in accordance with any other relevant decision adopted by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol. Paris (CMA)</i>	<sup>1</sup> January 2022-31 December 2030
(b)	<i>Whether the objective is for one year or several years, as the case may be</i>	One-year target (2030).
<b>3.</b>	<b>Scope and coverage</b>	
(a)	<i>General description of the target</i>	The proposed mitigation measures will enable CAR to reduce its GHG emissions compared with the trend scenario. The level of GHG reduction in 2030 is 4284.42 GgeCO <sub>2</sub> in absolute terms, and 24,28%.

<sup>22</sup> As per Decision -/CMA.1: Further guidance on the mitigation section of decision 1/CP.21.

		The level of reduction in VCFCs varies from -13.67% to -55.31% depending on the type of pollutant by 2030.
(b)	<i>Sectors, gases, categories and pools covered by the nationally determined contribution, including, where appropriate, in accordance with the guidelines of the Intergovernmental Panel on Climate Change. climate (IPCC)</i>	Greenhouse gases: CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFC Short-lived climate pollutants: PM <sub>2.5</sub> , PM <sub>10</sub> , CN, CO, NO <sub>x</sub> , SO <sub>2</sub> , NH <sub>3</sub> , NMVOCs
(c)	<i>How the country Party has taken into account paragraphs 31(c) and (d) of decision 1/CP.21<sup>23</sup></i>	The revised NDC includes all relevant categories of anthropogenic emissions or removals, in line with the 2006 IPCC Guidelines. Compared with the first NDC, the coverage of the revised NDC has been extended to PCCVD.
(d)	<i>Mitigation co-benefits resulting from the Parties' adaptation actions and/or economic diversification plans, including descriptions of specific projects, measures and initiatives of the Parties' adaptation actions and/or economic diversification plans</i>	Mitigation co-benefits can be expected from the implementation of the following adaptation measures: Restoration of deforested landscapes through reforestation with multi-purpose species; Regulation of the artisanal exploitation of timber and energy wood and measures to reduce pressure on resources; Promotion of agroforestry to reduce climate risks and the impact of climate change on the environment. diversification of economic options.
<b>4.</b>	<b>Planning process</b>	
(a)	<i>a) Information on the planning processes that the country Party has undertaken to prepare its NDC and, if available, on the implementation plans.</i>	The process was led by the National Climate Coordination, with support from the UNDP's Climate Promise initiative. A Steering Committee (CoPIL) representative of all parties (including representatives of women's, youth and indigenous peoples' organisations), set up by ministerial decree, acted as an Intersectoral Technical Working Group responsible for supporting the process of formulating and validating deliverables at the various stages. Taking into account CLHPs, in addition to greenhouse gases, is a good practice on which other countries are building. Parties could draw inspiration from.
(c)	<i>How the country Party's preparation of its NDC has been informed by the results of the global stocktaking, in accordance with Article 4, paragraph 9, of the Paris Agreement</i>	The CAR's first NDC was submitted in 2016. In accordance with Article 4, paragraph 9, of the Paris Agreement, this second NDC will be drawn up five years after the first. As the global review is scheduled for 2023, the revision of the NDC was inspired by the September 2021 synthesis report of the United Nations Framework Convention on Climate Change (UNFCCC). Climate Change (UNFCCC).
<b>5.</b>	<b>Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, where appropriate, removals</b>	
(a)	<i>Assumptions and methodological approaches used to account for anthropogenic greenhouse gas emissions and removals corresponding to the NDC of the country Party, in accordance with paragraph 31 of decision 1/CP.21 and the accounting guidelines adopted by the Meeting of the Parties to the Paris Agreement (CMA)</i>	Emissions and removals are reported in accordance with IPCC guidelines. There is methodological consistency between the 3 <sup>rd</sup> National Communication and the CDN as regards the reference level.  CAR intends to report on the GHG inventory in accordance with Decision 18/CMA.1 and will report on progress in implementing the NDC by 31 December 2024.

<sup>23</sup> The Parties shall endeavour to include all categories of anthropogenic emissions or removals in their nationally determined contributions and, where a

source, sink or activity is taken into account, shall continue to include it.

(d)	<i>IPCC methodologies and metrics used to estimate greenhouse gas emissions and removals;</i>	IGES tool: Tier 1 method (GHG Inventory Manual 1996, revised version and 2006); EMEP / CORINAIR air pollution emissions inventory tool Reference year: 2010 Reference data: Third National Communication
(i)	<i>How are reference indicators and reference levels constructed?</i>	The national inventory report from the Third National Communication was used to construct the reference scenario. It is combined with a top-down statistical method of extrapolation based on the average annual rate of change, and the growth scenarios set out in the sectoral policy instruments. These can be improved and/or revised in future processes by making more data available and confirming or correcting growth rates. average annual
6.	<b>How the Party considers its NDC to be fair and ambitious in the light of its situation national</b>	
(a)	<i>How the country Party considers that its nationally determined contribution is fair and ambitious in the light of its national situation;</i>	Despite the country's socio-economic situation ( <sup>188th</sup> out of 189 countries on the HDI), CAR aims to contribute to the reduction of greenhouse gas emissions at global level, in accordance with the principle of common but differentiated responsibility. The revised NDC covers more sectors and gases. In relative terms, its ambitions are higher than those of its predecessor (24.28% for the revised NDC and 5% for the first NDC), but lower in absolute terms: 4,284.42 GgeCO <sub>2</sub> compared with 5,500 GgeCO <sub>2</sub> for the first NDC. This difference is due to the revision of the BAU scenario, which is more realistic because it is based on more data and more sectors.  The country is a major carbon sink (728,896 GgeCO <sub>2</sub> ), which it aims to protect and advance through the proposed sequestration measures. What's more, from a conceptual point of view, it introduces a new approach that could be of interest to other countries on the road to sustainable development. low-carbon development.
(b)	<i>Equity considerations, including a reflection on equity</i>	See 6 (a)
(c)	<i>How the country Party has dealt with Article 4, paragraph 3, of the Paris Agreement<sup>24</sup></i>	See 4 (c). Ditto for 6 (c) and 6 (d)
7.	<b>How the NDC contributes to achieving the objective of the Convention as set out in Article 2</b>	
(a)	<i>How the nationally determined contribution contributes to the achievement of the objective of the Convention as set out in its Article 2</i>	See 4 (c).
(b)	<i>How the nationally determined contribution contributes to Article 2(1)(a) and Article 4(1) of the Paris Agreement</i>	See 4 (c).  The CAR's revised NDC is based on an improved and more robust database for estimating reference scenario emissions and removals and reductions induced by mitigation measures.

Table 7: Information to facilitate clarity, transparency and understanding

<sup>24</sup> The following NDC of each Party will represent a progression from the previous NDC and will correspond to its highest possible level of ambition, taking into account its common but differentiated responsibilities and respective capabilities, having regard to different national contexts