



# Nationally Determined Contribution of the Republic of Haiti

FIRST UPDATE - 2021





# **NATIONALLY DETERMINED CONTRIBUTION OF THE REPUBLIC OF HAITI**

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# FOREWORD



**S**I Climate change seemed like a distant phenomenon, but it has been a harsh global reality for at least two decades. They are one of the major environmental and development challenges facing the Republic of Haiti, a small island developing State.

Such a situation leads the Haitian government to consider the issue of climate change as a major issue for the sustainable socio-economic development of the country. Indeed, the externalities linked to it are on an unprecedented scale for our country, in terms of impacts on the physical structures of the territory and the levies on national development efforts. In this regard, the loss and damage recorded in the country as a result of certain extreme weather events over the past two decades is symptomatic of the extent of the negative impacts of adverse conditions attributable to climate change on key sectors of Haitian national life.

The threat is global and part of global governance. Thus, since the entry into force of the Paris Climate Agreement in 2015, ratified by Haiti in 2016, Parties are required, in the context of their obligations under the United Nations Framework Convention on Climate Change (UNFCCC), to communicate their efforts, in the form of a Nationally Determined Contribution-NDC, with the aim of keeping global warming well below 2°Celsius.

In this perspective, and despite the country's very low participation in the global warming process, the Republic of Haiti, clinging to the principle of "common but differentiated responsibilities and respective capabilities", has the privilege of presenting the updated version of its NDC.

The **updated Haiti 2030 NDC**, which the Ministry of Environment of the Republic of Haiti presents here, reflects a strong political expression by the Government of Prime Minister Ariel Henry, to begin laying the foundations for the reconstruction of a competitive Haitian space with sustainable dynamics. Aligned with the government's roadmap, national development priorities and sustainable development goals, the latter outlines the country's adaptation priorities and needs, the satisfaction of which will enable it to absorb climate shocks and bounce back on a more solid basis.

The **Haiti 2030 NDC** is a document of hope, bringing many lasting transformations. It proposes ambitious targets for the nation to reduce greenhouse gas emissions by more than 31% in the areas of waste, electricity, services, agriculture, forestry and land use. The country's resilience will also be strengthened through adaptation measures in agriculture, livestock, fisheries, water resources, road infrastructure, coastal zones and health.

To achieve this, the Republic of Haiti hopes, in the name of climate justice, to be able to count on the technical and financial support of the international community through multilateral mechanisms and instruments on climate change; as well as its appropriation by the different categories of key actors in the country.

**James Cadet**  
Minister of the Environment



## THANKS

We would like to thank the partners and institutions without whom this work would not have been possible. These include:

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The Departmental Directorates of the Ministry of the Environment (MDE) for their support in the planning of regional consultation workshops;

Participants who took part in and contributed to the various workshops, sectoral and bilateral consultations;

National and international consultants who led the process of developing this document.

**SUMMARY TABLE OF HAITI'S CONTRIBUTION**

<b>Theme</b>	<b>Highlights</b>
Perimeter	National territory
Base year	2000
Implementation horizon	2030
NDC Development Process	Participatory and inclusive combining a targeted literature review, regional consultation workshops and expert feedback.
Sectors considered	<p>Attenuation Energy - Agriculture, Forestry and Land Use (AFOLU) - Waste - Charcoal production</p> <p>Adaptation Agriculture, livestock, fisheries, water resources, road infrastructure, coastal areas, health and habitat</p> <p>Loss and damage Agriculture, livestock, fisheries, water resources, road infrastructure, coastal areas, health and habitat and energy</p>
Gases covered	CO2, CH4, N2O
Attenuation	Unconditional reduction of 6.32% compared to the baseline Conditional reduction of 25.5% compared to the baseline scenario.
Adaptation	<p>Adaptation priorities Strengthening the adaptive capacity and resilience of the population through: watershed management and soil conservation; coastal zone management; the development and conservation of natural resources; the preservation and enhancement of food security; water protection and conservation; the construction and rehabilitation of infrastructure, the rational management of waste and the establishment of information, education and awareness-raising programmes.</p>
Loss and damage	<p>Priorities for loss and damage solutions Providing responses to loss and damage related to climate change through: the implementation of insurance programs; the development and promotion of economic programs; the implementation of reforestation and reforestation programmes, the improvement of water availability and quality, the relocation of vulnerable and affected populations, the restoration and strengthening of infrastructure and the creation of national funds dedicated to loss and damage.</p>
Capacity building and technology transfer	<p>Capacity building: Vulnerability assessment, development and monitoring and evaluation of programmes and projects, reporting on progress in the implementation of the NDC, establishment of appropriate inter-agency cooperation mechanisms</p> <p>Technology transfer: Agroforestry, fruit orchards, photovoltaic solar power plants, solar water pumps, impluvium, gabionnage, progressive terrace, raised construction, water meters</p>
Additional (external) financing requirements	<p>Mitigation: USD 4.056 billion</p> <p>Adaptation: USD 13 billion (80% conditional and 20% to be financed by the public treasury)</p> <p>Loss and damage: USD 4.98 billion (90% conditional and 10% to be financed by the public treasury)</p>

# 1. INTRODUCTION

**E**n Building on the objectives of its Strategic Development Plan 2012-2030 and its National Policy on Climate Change, the Republic of Haiti, in accordance with the requirements of the Paris Agreement, presents the first update of its NDC to the community of nations. It was developed in a global scientific context inviting countries to Parties to this Agreement and its parent convention to intensify efforts to raise the overall level of mitigation and the profile of adaptation.

It is in this spirit that the country carried out the work that led to the communication of this updated version of its NDC. The latter, in addition to sections common to NDCs such as mitigation ambitions, information to facilitate clarity, transparency and understanding, equity and ambition, adaptation actions, institutional framework and means of implementation, also includes specific sections on gender and on loss and damage due to anthropogenic climate change.

By integrating these last two (2) sections into this first revision of the NDC, the Republic of Haiti clearly wants to indicate their importance in its national planning system and in its sustainable development process. It finds it difficult to envisage the well-being of Haitian citizens today and tomorrow as well as the preservation of the bases of national production without effectively taking into consideration the concerns related to these two challenges.

## 1.1 NATIONAL CIRCUMSTANCES

A small island developing state, Haiti is located in the heart of the Caribbean and shares the island of Hispaniola, of which it occupies the western third with the Dominican Republic. Haiti has the geographical particularity of having a territorial sea of around 30,000 km<sup>2</sup> while the land surface occupies an area of 27,750 km<sup>2</sup>. At the same time, the country has 3/4 of its surface mountainous and rugged with steep slopes often exceeding 40%.

This particular geographical location gives Haiti a high ecosystem diversity in relation to its size. There are different plant formations corresponding to the 9 living areas of Holdridge. At the same time, this same geographical location means that it is very exposed to extreme weather events. Indeed, located in the preferred path of cyclones, it is regularly the subject of natural disasters such as increasingly severe floods. In addition, some regions of the country, in particular a good part of the North-West, North-East, South-East and Centre departments, are occasionally confronted with drought episodes. These exposures are amplified by particular geomorphological factors characterized by highly rugged terrain, increased deforestation and inappropriate farming and land use practices that exacerbate climate-related disasters.

Among Small Island Developing States and Hemispheric countries, Haiti is the most vulnerable country to climate change. Climate risks (floods, droughts, hurricanes, etc.) are therefore very important and these risks are greatly aggravated by climate change. Associated with these are recurrent climatic phenomena: El Niño, which regularly creates a rainfall deficit and a much drier climate, and La Niña, which causes colder and wetter climatic conditions in the Caribbean.

Although it is less able to cope with climate disasters, Haiti is nevertheless one of the most affected territories in the world. According to the World Risk Report (Behlert et al., 2020)<sup>1</sup> Haiti ranks 22nd among the countries most at risk. Particularly incriminated are the high vulnerability and the lack of capacity of the country to react and adapt. This situation

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<sup>1</sup> Behlert et al., 2020. World Risk Report. Focus: Forced displacement and Migration.

traps the country in a vicious circle of repeated disasters that constitute a major brake on development efforts and contribute to keeping its population in poverty. Indeed, natural disasters have a great impact on the national economy. Socio-economic sectors important for national development are under serious threat. This is the case for agriculture, fisheries, infrastructure, forestry, water resources, among others. These sectors have been seriously weakened by the extreme weather events of recent years. They have suffered significant damage and are still struggling to get back on their feet. In recent decades, natural disasters have demonstrated the magnitude of the impacts of exogenous shocks on development gains through their repercussions on the Gross Domestic Product.

Agriculture, the most important economic sector of the Republic of Haiti in the sense that it employs more than 65% of the Haitian population, represents only 19% of the Gross Domestic Product (GDP) in 2020 compared to 30% in the 80s. However, national agricultural production has continued to decline in recent decades until it no longer meets an increasingly growing national food demand. And for good reason, the problems of insecurity linked to land tenure and the predominant informal land management methods, which are not conducive to sustainable investments, the small size of farms (1.8 ha on average), have been added to climate-related issues, which are manifested in particular by prolonged droughts that disrupt the cropping calendar, floods, cyclones and so on.

Each climatic episode leaves behind economic losses that increase annually. Thus, following the passage of Hurricane Jeanne, the damage in the area was estimated by the Economic Commission for Latin America and the Caribbean (ECLAC, 2005)<sup>2</sup> at 845 million gourdes, or more than 20 million USD (\$1 USD = 40 Gdes). In 2008, Haiti was hit by 4 hurricanes (Faye, Gustav, Hanna and Ike). Estimates made by the Haitian government have estimated the damage in the area at USD 125 million. In the same dynamic, Hurricane Matthew, which hit the departments of the Great South of the country in 2016, had significant impacts and caused significant damage to the productive sectors in general and to agriculture in particular. The Post-Disaster Needs Assessment (Government of the Republic of Haiti, 2017)<sup>3</sup> carried out at that time estimated the damage and losses caused to the agricultural sector at US\$573.53 million. For annual and perennial crops alone, according to the Ministry of Economy and Finance (MEF, 2016)<sup>4</sup>, losses were close to USD 150 million.

In addition to agriculture, other subsectors such as fisheries and livestock are not spared from the vagaries of the weather. In the case of livestock, long periods of drought make water less and less available to livestock. At the same time, this activity is very exposed to strong winds, intense rainfall and flooding. In fact, in the aftermath of Cyclone Matthew, livestock losses were estimated at US\$70,121,783. Other damages, estimated at US\$9,471,403 (MEF, 2016), involved livestock products such as eggs, milk and honey.

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- 2 ECLAC, 2005. Hurricane Jeanne in Haiti: Damage and effects on the departments of North-West and Artibonite: Deepening vulnerability.
  - 3 Government of the Republic of Haiti, 2017. Post-disaster needs assessment for Cyclone Mathieu
  - 4 Ministry of the Economy and Finance (MEF), 2016. Rapid assessment of damage and losses caused by Hurricane Matthew and food for thought for recovery and reconstruction

Fisheries, which are generally closely linked to the conditions of marine ecosystems, are strongly affected by certain changes attributable to anthropogenic climate change. On the one hand, these cause damage to fishing facilities and equipment. On the other hand, they make the type of fishing practiced in Haiti more difficult and put fishermen in a situation where they have to resort to other techniques and more efficient and adapted equipment to continue to engage in this activity.

Civil engineering structures such as roads, buildings, bridges as well as coastal infrastructure such as ports, communication and other tourist infrastructure are also highly exposed to the effects of climatic events. They are suffering the full force of the consequences of repeated floods and cyclones. For example, the damage and losses caused by Hurricane Matthew in 2016 on the tourism sector were estimated at US\$15.5 million (Government of the Republic of Haiti, 2017).

Water resources are another sector that is highly vulnerable and is severely affected by climate change. The scarcity of the resource is one of the major problems facing Haiti. Indeed, because of the longer and longer periods of drought, water is less available in some places and very scarce in others. Thus, despite significant investments, drinking water coverage remains very limited at the national level. Nearly 4 million people, or nearly a third of the population, get their drinking water from an unimproved, i.e., inadequate source for consumption. At the same time, prolonged droughts have caused a considerable drop in the flow of rivers already plagued by erosion and sedimentation problems. The non-availability of water in quality and quantity for domestic uses and socio-economic activities such as agriculture and livestock are often the basis of conflicts between users of the resource.

Forests are also highly vulnerable to climate change. Although they play a role in mitigating the phenomenon through their carbon sequestration potential, forest ecosystems are nevertheless very sensitive to hurricanes and winds. Matthew's passage through the southern part of the country left a devastated landscape characterized in particular by the loss of many trees that did not withstand the strong winds of the hurricane. This is the case, in particular, of the forests of the Macaya National Natural Park, containing the country's greatest wealth in terms of biodiversity, which has been affected by 95%, as has the forest of the protected areas "Grand Bois" and "Deux mamelles" (Government of the Republic of Haiti, 2017). Of course, it is not always easy to make monetary estimates of the losses resulting from the damage caused to forests by these climatic events, but there is no doubt that the economic consequences are significant. In fact, following the passage of Cyclone Matthew, the Ministry of Economy and Finance estimated the cost of reforestation in the Macaya National Natural Park at USD 11 million (MEF, 2016).

From an energy point of view, Haiti's energy needs extend mainly to the residential, industrial, transport, commercial and public services sectors. They are covered by wood, petroleum products, bagasse and water. Benefiting from a strong potential in renewable energy that can meet all its electricity needs, Haiti is still very dependent on the import of petroleum products, which account for almost 7% of its gross domestic product (GDP). Hydropower in electricity production provides only 15%. Solar and wind energy are only exploited on a very small scale, as there is currently no device to transform it into a useful form of energy (MTPTC, 2014)<sup>5</sup>.

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5 Ministry of Public Works, Transport and Communications. (2014). Roadmap for a Sustainable Energy System in Haiti

Although it is a low emitter of greenhouse gases (GHGs) compared to industrialized countries, its agriculture is, among other sectors, the most important source of emissions. These could be mitigated by focusing on different alternatives such as: increasing the share of renewable energy in electricity generation, upgrading existing electricity installations, using energy-efficient stoves to replace traditional stoves, improving the energy efficiency of coal-fired furnaces and introducing electric mobility in major urban centres.

The vulnerability of the energy sector to the impacts of climate change is mainly characterized by significant damage to associated infrastructure during the passage of extreme hydrometeorological events. This is evidenced by the passage of hurricanes Fay, Gustav, Hanna and Ike in 2008, which caused losses and damages of 7.7 million US dollars on the electricity subsector. As for transport (land, sea and air), loss and damage was estimated at more than 75 million US dollars.

Tourism is thus among the most promising sectors of activity in relation to the development objectives that the country has set itself. Straddling several other sectors such as transport, accommodation, catering, excursions and handicrafts, the Haitian tourism sector remains very dependent on the climate and very sensitive to the slightest effects affecting those on which it relies. At present, the problem of insecurity affects the attendance rate of both national and international visitors. Its contribution to GDP has declined significantly.

Compared to the Dominican Republic and Cuba, the figures are very alarming. For the year 2019 alone, the monetary amounts generated by the Dominican Republic, Cuba and Haiti respectively amount to USD 14.7 trillion, USD 10.9 trillion and USD 0.8 trillion. At the same time, they correspond to the percentage of GDP 17%, 10.6, 8.3%.

While instability is one of the greatest constraints to the development of tourism in Haiti, it should be stressed that natural disasters will intensify further and to a large extent undermine efforts to revitalize the sector. Many accommodation and catering infrastructures located in coastal areas are very often subject to marine submersion. Transport, electricity, water and sanitation infrastructure that supports the sector is also highly exposed to natural hazards. In 2016, according to the Ministry of Tourism and Creative Industries (MTIC), the destruction caused by Hurricane Matthew on tourism in Haiti was estimated at nearly 2 billion USD. All this has social impacts that dangerously threaten the country's political stability.

Ultimately, the complex (political instability, the precarious social situation experienced by a large part of the population, growing insecurity, the management of natural disasters) constitutes a bottleneck that will have to be addressed in order to reverse the degeneration of the tourism sector.

In summary, repeated climate disasters have serious consequences on various key sectors of the national economy. According to the latest Climate Risk Index (Eckstein et al., 2020)<sup>6</sup> developed by Germanwatch, which analyses the extent to which countries and regions have been affected by the impacts of loss events related to climate and weather conditions (storms, floods, heat waves, etc.) and is based on average annual values over the period 1999-2018, Haiti ranks 3rd just behind Puerto Rico and Myanmar. As a result, Germanwatch estimates that over the past 20 years, Haiti has lost an average of nearly USD 400 million per year as a result of damage caused by climate disasters.

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<sup>6</sup> Eckstein et al., 2020. Global Climate Risk Index 2020.

Despite the severity of the climate risk challenges, there is no sign that the situation will improve in the future. According to the Intergovernmental Panel on Climate Change, climate change is expected to amplify existing climate-related risks and create new risks to natural and human systems. Some of these risks will be limited to a specific sector or region, while others will have cascading effects. For Haiti, such forecasts are very important and should be taken very seriously. Indeed, Haiti's vulnerability to climate change is considered in terms of variables such as sea level rise and Haiti's topography, increases in air temperature, changes in average precipitation patterns, and changes in the frequency and intensity of extreme events.

However, for Haiti, the climate forecasts with regard to these projected variables are not very encouraging. The different scenarios show that climate change at the national level is expected to manifest itself in an increase in the average annual temperature of 0.8 to 1°C by 2030 and 1.5 to 1.7°C by 2060. Drought episodes are expected to be prolonged, as average annual rainfall is expected to fall by 6 to 20% by 2030; Projections range from -5.9% to -20.0% in 2030, while in 2060 they will vary from -10.6% to -35.8%. It is therefore expected that rainfall will be reduced by more than 50% and average temperatures will increase by nearly 4°C by 2080-2099. Some studies suggest that the frequency of Atlantic cyclones of category 4 and 5 on the Saffir-Simpson scale will increase by 80% over the next few decades. There is every reason to believe that, if nothing is done, disasters will accelerate in the country.

While it is difficult to attribute the occurrence of extreme weather events to climate change, it is clear that climate change is likely to increase in warmer climates and that the country must prepare to be systematically affected by such events. The high vulnerability of key sectors of national development will not be able to withstand the pressures that these sectors will face. With a major storm every 3 to 4 years, as powerful and devastating as Hurricane Matthew, we can probably expect significant economic losses per event for the next decade. Drought and flooding events are likely to be longer and more pronounced, causing many crop losses in several agricultural regions of the country. By 2030, negative annual variations in agricultural production due to these climate shocks could rise to 8 to 10%.

If climate issues are not seriously taken into account and if the support provided for in the various multilateral instruments on climate change is not adequately provided, it will be difficult for Haiti to implement its adaptation priorities outlined in the National Climate Change Policy (NCCP), the National Adaptation Action Programme (NAP), the Climate Resilience Strategy Paper (CRSP) and the national plan Adaptation Goals (NAP), or even claim to achieve the national development goals formulated in the Strategic Development Plan (SDP) and the Sustainable Development Goals (SDGs) by 2030. Thus, it is the livelihoods, the future and the well-being of the millions of young people who make up the vast majority of its population that are compromised. Moreover, as an LDC and SIDS, the Republic of Haiti remains a very low emitter of GHGs. However, it remains committed to a just energy transition that is compatible with its quest for sustainable socio-economic development.

## **2. METHODOLOGY FOR DEVELOPING THE CONTRIBUTION NATIONALLY DETERMINED OF HAITI**

The NDC remains both a planning tool and a commitment document that can contribute significantly to meeting the collective challenge of combating climate change. This is the second generation and follows the first NDC developed under the Paris Agreement signed in 2015 and ratified in April 2016. It takes into account all the

concerns and sensitivities of all sectors of national life: state institutions, the private sector, civil society, the parastatal sector, etc. It is therefore the result of a participatory and inclusive process that gives it legitimacy and augurs a promising future in terms of ownership of the process and its implementation.

In the wake of the same inclusive and participatory dynamic that guided the formulation of the 2015 NDC, the development of this first update of the NDC has gone through 3 major stages.

A preliminary step from which discussions arose between the experts in charge of the development of the document and the decision-making team of the Ministry of the Environment, the entity responsible for coordinating the process. This step was reinforced by an in-depth analysis of the lessons learned from the first version of the NDC, its strengths and weaknesses, as well as the gaps identified both in terms of priority sectors and the targeting of adaptation and mitigation measures promoted. At the same time, this step has been reinforced by the use of the flagship documents being prepared and finalized in relation to the fight against the adverse effects of climate change.

In the end, this step has striven to

- (i) Enhance the client's instructions and instructions in order to meet their expectations
- (ii) size the degree of implementation of the original NDC on a full scale while seeking to identify the blocking factors or constraints that have not made it possible to achieve the objectives efficiently and effectively from a technical, managerial, financial and institutional point of view, etc.
- (iii) seek the real involvement of stakeholders concerned by the issue of combating climate change, in particular the State, civil society (private sector, NGOs, CBOs, etc.) and partners of international cooperation agencies

A consultation stage itself materialized by mixed video/face-to-face meetings and regional workshops

#### a) Video/face-to-face meetings

They set out to make available to participants a framework note targeting the relevance of the NDC, defining the objectives, the stakes, and the scope of the initiative and the challenges to be met. All this, through appropriate presentations followed by rich discussions. The idea behind the approach was not only to stimulate the process of participation, appropriation and involvement of all the key actors in the preparation of the collective work, but also to guarantee its legitimacy. Many institutions, sectors and resource persons took part in these meetings. They also made it possible to profile and anticipate the level of effort to be made by each of the actors in terms of contribution from a technical and financial point of view, transfer of knowledge and know-how during the implementation of the updated NDC.

**b) Conducting workshops**

Four (4) regional workshops encompassing the ten (10) geographical departments of the country have been scheduled. Although they were carried out in a rather specific epidemiological and political context, they nevertheless offered the opportunity to (i) review both adaptation and mitigation measures (ii) decide in an inclusive manner on the inter-institutional mechanism for carrying the NDC.

A stage of formulation and validation of the updated NDC consisting of the drafting of the final document following a feedback process that took shape through systematic exchanges and consultations with/from all stakeholders. They were called upon to give their opinion in particular on the relevance of the realistic adaptation and mitigation measures envisaged as well as on the ways and means for its implementation and evaluation

### **3. GAS EMISSIONS BASELINE GREENHOUSE**

The last GHG inventory for Haiti communicated in 2013 to the United Nations Framework Convention on Climate Change (UNFCCC) was carried out for the year 2000. It was carried out according to the methodology of the revised 1996 guidelines of the Intergovernmental Panel on Climate Change (IPCC). For this year, the level of emissions amounts to 7832 Gg of CO<sub>2</sub> equivalent. Updating this inventory according to the 2006 IPCC guidelines considering the new GWPs of the 3 main gases, this figure brings this figure to 8469 Gg CO<sub>2</sub>equivalent.

### 3.1 HAITI'S GHG EMISSIONS PROFILE

National emissions are dominated by the Agriculture, Forestry and Land Use (AFOLU) sector at more than 75% and the energy sector represents only 19%. The following figure shows the contribution of sectors to national emissions, excluding forestry, for the year 2000.

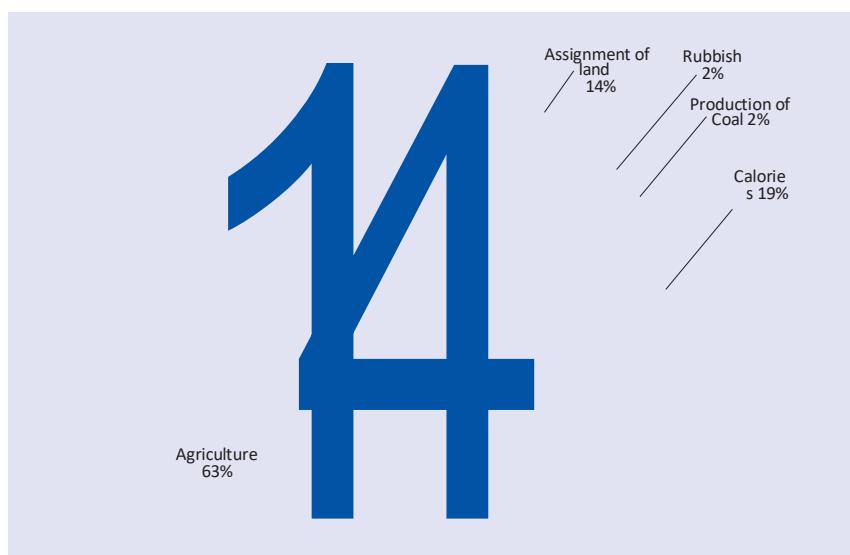
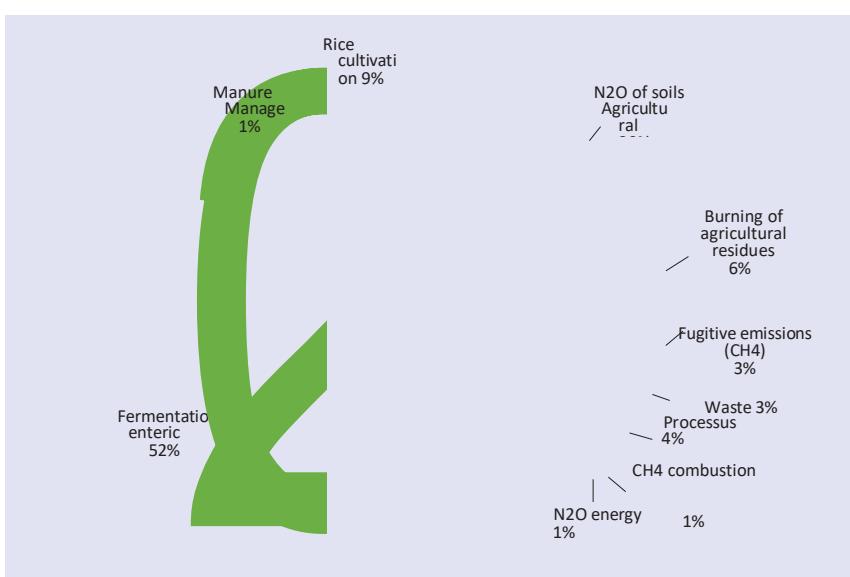


Figure 1: RepaiHaiti's GHG emissions by sector for the year of re-year.

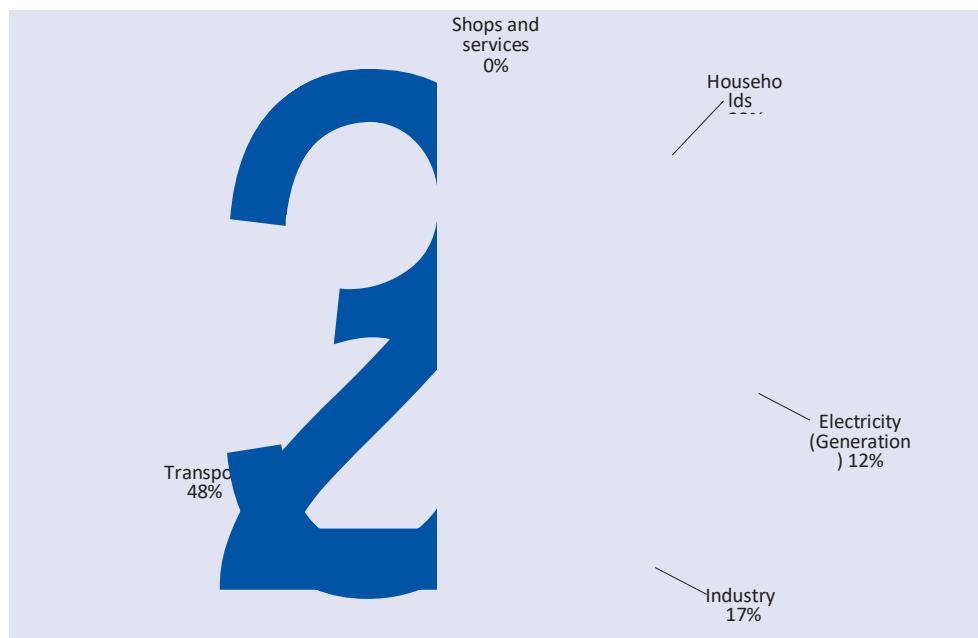
Ference

The breakdown by emission category reveals the strong contribution of enteric fermentation and agricultural soils, which account for 49% and 23% respectively.



## Figure 2: Distribution of emissions by category

Emissions from the energy sector are dominated by the transport sector at nearly 50% and the household sector at 23%.



## Figure 3: RDistribution of energy sector emissions by source

Haiti is a net emitter of GHGs. Considering the forestry sector, emissions exceed removals by sinks at the biomass level. The following figure shows the evolution of the net GHG emissions balance over the period 1994-2000.

the evolution of the net GHG emissions balance over the period 1994-2000.

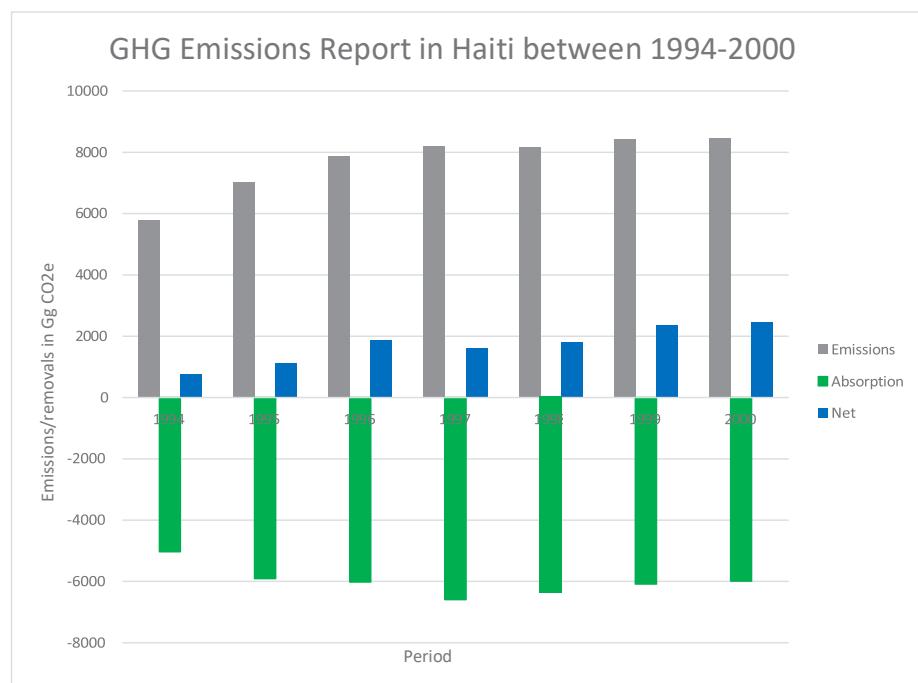


Figure 4: GHG Emissions in Haiti between 1994-2000

## Figure 4: GHG Emissions in Haiti between 1994-2000

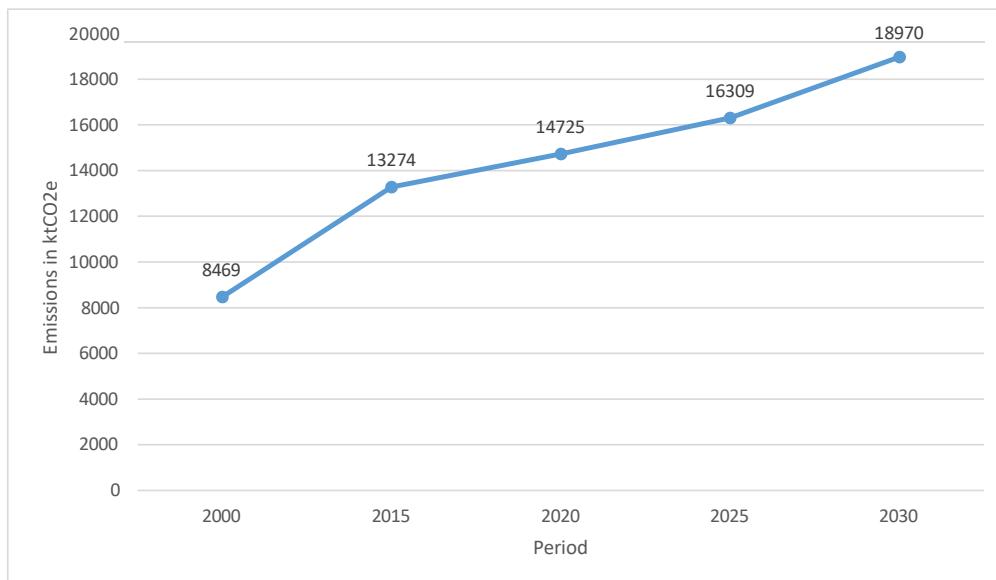
## **4. HAITI'S CONTRIBUTION TO MITIGATION**

**C** As in the initial version of the NDC, mitigation targets are expressed in relation to a baseline scenario. This scenario is defined by 2030, taking the year 2000, corresponding to the year of the last national inventory submitted to the secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), as the year of reference.

The baseline scenario has been revised to take into account.

- Recent developments and changes in the growth prospects of the economy that have led to the visibly deviate from the projections of the "Strategic Plan for the Development of Haiti (PSDH)- Emerging Haiti 2030". The assumptions based on the World Bank and ECLAC projections for economic growth have been revised downwards and should not exceed 1.5% between 2020-2025 and 3% between 2025-2030;
- Projections of growth in final energy consumption in toe/capita based on assumptions of 1.2% between 2020 and 2025 and 2.2% between 2025 and 2030, and;
- The updating of the national inventory according to the 2006 IPCC guidelines instead of revised 1996 emissions that had a significant impact on the base year emission level.
- The population growth assumptions remain unchanged. The same is true for the structure of the energy mix, which stipulates that it will remain at 85% non-renewable thermal and 15% renewable by 2030, for the reference scenario.

The following figure shows the revised baseline scenario.



**Figure 5: Emissions trends to 2030 in the baseline scenario**

#### 4.1 UNCONDITIONAL MEASURES

The unconditional mitigation scenario includes 23 measures (see table below) that the country commits to, taking into account its national circumstances and capabilities. It corresponds to a reduction of 6.32% compared to the reference scenario.

**Table 1. Number of unconditional measures for the different sectors**

Sector	Number of measurements
Households	7
Forest	4
Services	4
Power Plants	4
Transport	2
Rubbish	2
TOTAL	23

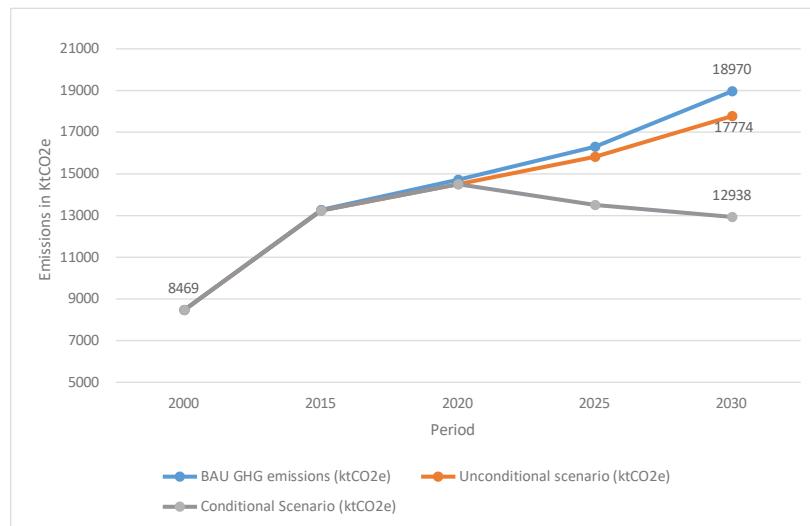
#### 4.2 CONDITIONAL MITIGATION

This scenario has a reduction target of 25.5% compared to the reference scenario. It is built around 35 measures.

**Table 2. Number of conditional measures for the different sectors**

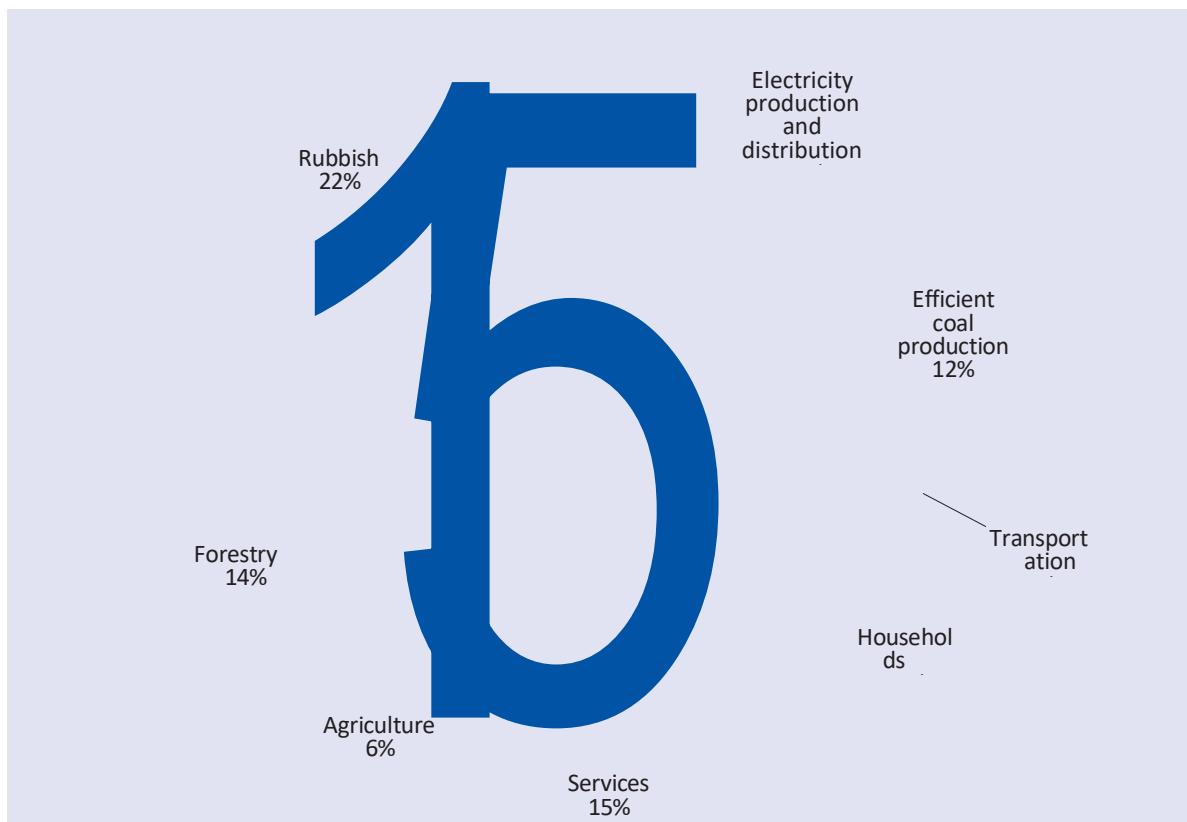
Sector	Number of measurements
Agriculture	4
Forest	5
Households	6
Services	3
Power Plants	9
Transport	1
Rubbish	3
Industry	2
TOTAL	35

The following figure shows the different emission scenarios considered



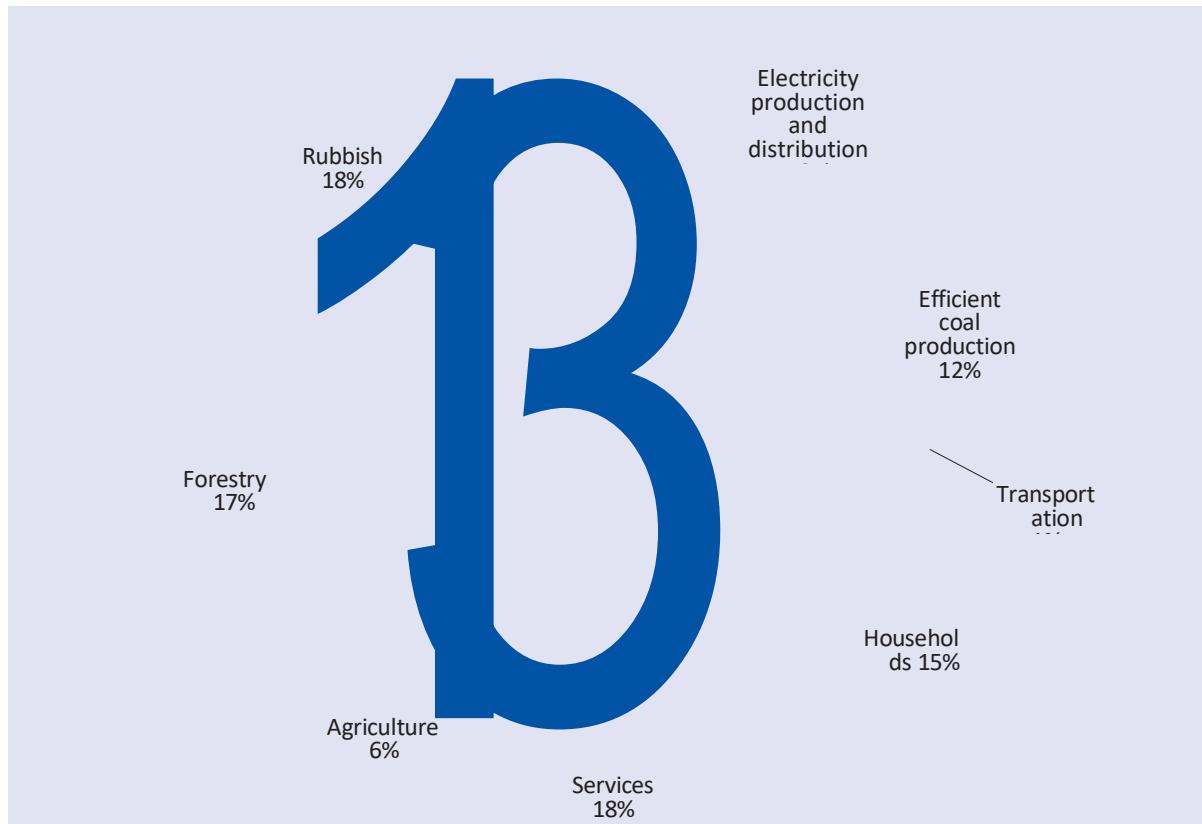
**Figure 6: Emissions trends to 2030 in baseline and mitigation scenarios**

The distribution of the mitigation effort, unconditional and conditional, for the year 2030 is as follows:



**Figure 7: Distribution of the mitigation effort for the target year**

If we consider the cumulative mitigation effort over the period 2020-2030, we have the following distribution:



**Figure 8: Distribution of the mitigation effort over the period 2020-**

## 4.3 SECTORAL MITIGATION MEASURES AND SOCIO-ECONOMIC IMPACTS

### 4.3.1 List of Conditional Mitigation Measures

**Table 3. Socio-economic impacts of conditional mitigation measures**

Sector	Mitigation measures	Unit of Measurement	Number		Links to the Sustainable Development Goals (SDGs)	Estimated costs in US\$ million
			2025	2030		
Agriculture	Improving pasture quality with legumes	1000 ha	10	20	   	60
	Fruit growing	1000 ha	7.5	25	   	150
	Manure Management	% DM Fat Added	3%	3%	  	10
	Crop cover (Increased carbon in soils)	1000 ha	10	30	   	38
Biomass energy	Electricity production from sugarcane bagasse	100kt of bagasse/year	0	10	  	51
EE Households	Electric lighting with compact fluoro bulbs as a replacement for incandescent bulbs	1000 blisters	70	250	  	12

Sector	Mitigation measures	Unit of Measurement	Number		Links to the Sustainable Development Goals (SDGs)	Estimated costs in US\$ million
			2025	2030		
Sector	Electric lighting with LED bulbs instead of incandescent bulbs	1000 blisters	100	450	  	21
	Efficient wood-burning stoves	1000 Stoves	50	100	  	57
	Efficient charcoal stoves	1000 Stoves	100	100	  	25
	LPG stoves replacing wood-burning stoves	1000 Stoves	100	150	  	25
	Efficient refrigerators	1000 Refrigerators	0	100	  	152
EE service	Efficient office lighting with LED bulbs	1000 blisters	5	10	  	1
	Efficient street lighting	1000 lamps	5	5	  	2
	Efficient water pumping	4 million m <sup>3</sup> of water	100	150	  	57
EE Industry	Production of fuels from biomass residues	1000 tons	77.4	90.97	  	175
EE offers	New natural gas-fired power plant	1 MW	30	90	  	228

Sector	Mitigation measures	Unit of Measurement	Number		Links to the Sustainable Development Goals (SDGs)	Estimated costs in US\$ million
			2025	2030		
	Single cycle combined cycle	100 MW Additional	0.3	0.75	  	95
Power Distribution	Efficient power grids	1GWh losses avoided	150	265	  	483
Forestry	Afforestation/ Reforestation	1000 ha of reforestation	30	50	    	380
	Assisted Forest Regeneration	1000 ha of Regenerated	8	15	   	70
	REDD: Deforestation avoided	1000 ha of deforestation avoided	9	11	     	20
	Reforestation with agroforestry	1000 ha of Regenerated	10	15	     	95

	Mitigation measures	Unit of Measurement	Number		Links to the Sustainable Development Goals (SDGs)	Estimated costs in US\$ million
			2025	2030		
Sector	Mangrove forest restoration	1000 ha of Regenerated	10	10.5	      	80
	Energy forest	1000 ha of reforestation	5	5	      	38
Fugitive emissions	Efficient charcoal production	100,000 tons of charcoal/year	0.98	2.5	  	85
Hydroelectricity	Hydropower connected to the main grid	1 MW	4	32	  	90
	Off-grid micro hydropower	1 MW	10	20	  	228
Discharge	Plastics Recycling	1000t/year plant	2	4	   	114
	Fuels from municipal solid waste	200 tDMS/Central Day	0.15	0.5	   	120
	Municipal solid waste composting	1000t/central day	0.3	0.75	   	75

Sector	Mitigation measures	Unit of Measurement	Number		Links to the Sustainable Development Goals (SDGs)	Estimated costs in US\$ million
			2025	2030		
Solar	Solar/diesel mini-grid	40 kW of the from solar	30	30	  	171
	Solar PV, small insulated grid, 100% solar	2MW	15	20	  	365
	Solar water heater, residential	1000 Rentals	0	10	  	9
	Solar LED Lights	1000 Lamps	75	100	  	7
	Solar street lights	1000 Rentals (0.05MW)	0	5	  	43
	PV solar house	500 W	5	20	  	30
Transport	Better maintenance and use of motorcycles	1000 motorcycles	0	200	   	19
Wind	Onshore wind turbines with storage	1 MW	0	50	  	375
Total						4056

### 4.3.2 List of Unconditional Mitigation Measures

**Table 4. Socio-economic benefits of unconditional mitigation measures**

Type	Discount option	Subtype Unit	Number		The SDGs)	Estimated costs in millions from US\$
			2025	2030		
EE households	Efficient lighting with compact fluorescent bulbs	1000 Blisters	0	30	  	1
	Efficient lighting with LEDs	1000 Blisters	25	50	  	3
	Efficient lighting with LEDs replacing compact fluorescents	1000 Blisters	30	0	  	1
	Efficient wood stoves	1000 pans 0		50	  	19
	Efficient charcoal stoves	1000 pans 20		30	  	6
	LPG stoves replacing wood stoves	1000 pans 20		30	  	5
EE service	Efficient electric stoves	1000 pans 15		20	  	13
	Efficient water pumping	4 Million m <sup>3</sup> of water	30	40	  	16

Type	Discount option	Unity of the Subtype	Number		The SDGs)	Costs Estimated in Millions from US\$
			2025	2030		
EE offers	New natural gas-fired power plant	1 MW	60	0	  	114
Forestry	Reforestation	1000 ha of reforestation	15	15	   	143
	REDD: Deforestation avoided	1000 ha deforestation avoided	10	5		0
	Assisted forest regeneration	1000 ha of Regenerated	5	10	  	43
	Reforestation with agroforestry	1000 ha of Regenerated	3	3	   	23
	Hydropower connected to the main grid	1 MW	0	36	  	103
Hydro	Mini off-grid hydropower	1 MW	0	0.5	  	4
Discharge t/year	Plastics Recycling power plant	1000	0.5	0.5	   	19



## **5. NEWS NECESSARY FOR CLARITY, TRANSPARENCY AND TO UNDERSTANDING**

**Table 5. Elements of information for clarity, transparency and understanding of mitigation ambitions**

<b>1. Quantified information on the reference point, including, where applicable, a base year</b>	
has. Base year(s), base year(s), reference period(s) or other starting point(s).	2000
b. Quantifiable information on the benchmarks, their values in the base year(s), base year(s), reference period(s) or other starting point(s) and, where applicable, in the target year.	The information on the baseline indicators is taken from Haiti's latest updated national inventory of Greenhouse Gases (GHGs) For the year 2000, the level of emissions amounts to 8469 Gg of CO2 equivalent
c. For strategies, plans and actions referred to in paragraph 6 of Article 4 of the Paris Agreement, where policies and measures as elements of nationally determined contributions where paragraph 1 (b) above is not applicable, Parties shall provide other relevant information.	N/A
d. Target in relation to the benchmark, expressed numerically, e.g. as a percentage or quantity of reduction.	With the implementation of mitigation measures, emissions will increase from 18 970 ktCO2e in the baseline scenario to 17 774 ktCO2e in the unconditional scenario and 12 938 ktCO2e in the conditional scenario. This represents a net reduction in emissions of 32% by 2030 compared to the baseline scenario, including 6% unconditionally.
e. Information on the data sources used to quantify the reference point(s).	The quantification of the reference points was based on the national GHG inventory published in Haiti's second national communication in 2013. However, a recalculation was produced to take into account the GWPs of the three main GHGs of the 4th IPCC report instead of the second IPCC report used in the 2013 publication.
f. Information on the circumstances under which the country Party may update the values of the benchmarks.	The values of the indicators may be updated in future inventory reports in the event of the availability of new data and/or methodological improvements.
<b>2. Deadlines and/or deadlines for implementation</b>	
has. Timeline and/or period of implementation, including start and end dates, in accordance with any other relevant decision adopted by the CMA.	2022-2030
b. Whether it's an annual or multi-year goal, as the case may be.	The target year is 2030.
<b>3. Scope and coverage</b>	
has. General description of the mitigation objective.	Reduction of 6032 ktCO2e by 2030 conditionally, representing a net reduction of 32% compared to the baseline scenario. This represents an increase compared to the initial CDN which was 31%. Unconditionally reduced by 1196 ktCO2e, representing a reduction of 6.32% compared to the baseline scenario.
b. Sectors, gases, categories and basins covered by the Nationally Determined Contribution, including, where appropriate, in accordance with IPCC guidelines.	The NDC covers all anthropogenic emissions and removals from all sectors of the economy All sectors of the IPCC guidelines, covered by the national GHG inventory, namely Energy, Agriculture, Land Use, Waste, Coal Production and Biomass are taken into account. The Greenhouse Gases (GHGs) covered are CO2, CH4 and N2O.

c. How the country Party has taken into account paragraphs 31 (c) and (d) of decision 1/CP.21.

This version of the NDC includes all the sectors present in the original NDC. No source or sink has been excluded. However, new sectors such as waste and fugitive emissions from charcoal production are taken into account.

Taking into account national circumstances, efforts are focused on sectors and activities with high mitigation potential and with the greatest socio-economic co-benefits

d. Mitigation co-benefits resulting from the Parties' adaptation measures and/or economic diversification plans, including the description of specific projects, measures and initiatives of the Parties' adaptation measures and/or economic diversification plans.

N/A

#### 4. Planning Process

a) Information on the planning processes that the Party has followed in developing its nationally determined contribution and, if available, on the Party's implementation plans, including, as appropriate:

i) National institutional arrangements, public participation and collaboration with local communities and indigenous peoples, taking into account gender issues;

ii) Contextual issues, including, but not limited to:

a. The national situation, including geography, climate, economy, sustainable development and poverty eradication;  
b. Best practices and experience in the development of the Nationally Determined Contribution;

c. Other contextual aspirations and priorities recognized upon accession to the Paris Agreement;

This information is presented in Chapter I: "National Circumstances" of this document.

The implementation of the NDC will be based on the National Climate Change Committee (CNCC), the description and mandate of which are presented in the section "Institutional framework and means of implementation"

Despite the health context characterized by the COVID19, the highly unstable and difficult political situation and the earthquake of August 14, 2021 which affected the entire Great South, the process of revising the NDC was highly participatory. The stakeholder consultation sessions at the departmental level were complemented by virtual expert consultation sessions and most importantly a national validation workshop. In addition, the revision of Haiti's NDC has allowed for better archiving and organization of data compared to the 2015 INDC.

Joining the Paris Agreement has enabled the Republic of Haiti to aspire to put the country on a green growth trajectory through the existence of key socio-economic sectors that are less sensitive to climate change, have a high capacity to respond to adverse weather conditions and are geared towards the adoption of low-carbon technologies. This vision is explicitly expressed in the National Policy for the Fight against Climate Change (PNCC) published in 2019. To achieve this, the priorities are to:

- Develop and implement the National Low Carbon Development Strategy;
- Develop and implement the National Capacity Building Strategy;
- Articulate NDC actions with the Sustainable Development Goals (SDGs).

(b) Specific information applicable to Parties, including regional economic integration organizations and their member States, that have agreed to act jointly pursuant to Article 4, paragraph 2, of the Paris Agreement, including Parties that have decided to act jointly, and the terms of the relevant agreement, in accordance with paragraphs 16 to 18 of Article 4 of the Paris Agreement;

N/A

<p>(c) How the Party's preparation of its Nationally Determined Contribution has been informed by the results of the global stocktake, in accordance with Article 4, paragraph 9, of the Paris Agreement;</p> <p>d) Each Party with a Nationally Determined Contribution under Article 4 of the Paris Agreement, consisting of mitigation benefits and/or economic diversification plans in accordance with Article 4, paragraph 7, of the Paris Agreement, shall submit information on:</p> <ul style="list-style-type: none"> <li>i) How the economic and social consequences of the response measures were taken into account in the development of the Nationally Determined Contribution;</li> <li>ii) Projects, measures and activities of a specific nature to be implemented to contribute to mitigation benefits, including information on adaptation plans that also generate mitigation benefits, which may include, but are not limited to, key sectors such as energy, resources, water resources, coastal resources, human settlements and urban planning, agriculture and forestry; and economic diversification measures, which may include, but are not limited to, sectors such as manufacturing and industry, energy and mining, transportation and communications, construction, tourism, real estate, agriculture, and fisheries.</li> </ul>	<p>The increase in Haiti's level of ambition in its Nationally Determined Contribution (NDG) was fostered by the TALANOA Dialogue set up at COP 22 in Marrakech, Morocco, and the awareness raised during the revision of the IPCC Special Report on 1.5°C.</p> <p>For each targeted sector, an analysis and assessment of the economic and social benefits was carried out to determine the importance and relevance of the measures to be implemented under the revised NDC.</p> <p>As part of this revised NDC, it is envisaged to establish and strengthen strategies and mechanisms for monitoring the implementation and compliance of the envisaged actions. It is also planned to set up a system of Measurement, Reporting and Verification of the interventions and measures implemented within the framework of this NDC. The implementation, monitoring and verification provisions provided for in the implementation of the revised NDC consider all sectors of the population's lives that can contribute to the achievement of mitigation and adaptation objectives.</p>
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## 5. Assumptions and methodological approaches, including those for estimating and accounting for anthropogenic greenhouse gas emissions and, where applicable, removals

<p>has. Assumptions and methodological approaches used to account for anthropogenic greenhouse gas emissions and removals corresponding to the country's nationally determined contribution, in accordance with paragraph 31 of decision 1/CP.21 and the accounting guidance adopted by the CMA.</p>	<p>The methodological approach used to account for anthropogenic greenhouse gas emissions and removals corresponding to the Nationally Determined Contribution (NDC) is that of the 2006 IPCC guidelines. The emission factors are mainly Tier 1. Activity data are taken from national statistics or, failing that, from the databases of the FAO, the World Bank and OLADE. For the next revision of the approach will be in line with the accounting guidelines for NDCs contained in Annex II of decision 4/CMA1.</p>
<p>b. Assumptions and methodological approaches used to report on the implementation of policies and measures or strategies in the Nationally Determined Contribution.</p>	<p>The same assumptions and methodological approaches will be used to report on the implementation of policies and measures or strategies in the Nationally Determined Contribution.</p>
<p>c. Where applicable, information on how the country Party will take into account existing methodologies and guidance under the Convention for accounting for anthropogenic emissions and removals, in accordance with Article 4, paragraph 14, of the Paris Agreement, as appropriate.</p>	<p>The next submission of the national GHG inventory to the Convention will be carried out in accordance with decision 24/CP.19 and will use the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. An update of the latest inventory will be carried out in this sense and will take into account the guidance of paragraph 14 of Article 4 of the Paris Agreement.</p>
<p>d. Methodologies and parameters used by IPCC to estimate anthropogenic greenhouse gas emissions and removals.</p>	<p>The Global Warming Potentials (GWPs) used are the same as those of the last national GHG inventory, taken from the second IPCC report (AR4), i.e.:</p> <p>CO<sub>2</sub> = 1      CH<sub>4</sub> = 25      N<sub>2</sub>O = 298</p>

e. Sector, category or activity-specific assumptions, methodologies and approaches, in accordance with IPCC guidance, as appropriate, including, as appropriate:	
i. Approach to address emissions and subsequent removals from natural disturbances on managed lands.	All emissions and removals from the latest national inventory are accounted for in the NDC, without any special consideration for natural disturbances on managed lands
ii. Approach used to account for emissions and removals from harvested wood products.	Data on harvested wood products were estimated and taken from the FAOSTAT database
iii. Approach used to address the effects of age class structure in forests.	N/A
f. Other assumptions and methodological approaches used to understand the Nationally Determined Contribution and, where appropriate, estimate the corresponding emissions and removals, including:	
i. How benchmarks, baselines and/or baselines, including, where applicable, sector, category or activity-specific baselines, are constructed, including, for example, key parameters, assumptions, definitions, methodologies, data sources and models used.	<p>The indicators, levels, baseline and mitigation scenarios were constructed from the Greenhouse Gas Abatement Cost Model (GACMO) (<a href="https://unepdtu.org/publications/the-greenhouse-gas-abatement-cost-model-gacmo">https://unepdtu.org/publications/the-greenhouse-gas-abatement-cost-model-gacmo</a>) tool developed by UNEP DTU Partnership and based on excel to which some calculations from the EX-Ante Carbon-balance Tool (EX-ACT) (EX-ACT) were integrated (<a href="http://www.fao.org/in-action/epic/ex-act-tool/suite-of-tools/ex-act/en/">http://www.fao.org/in-action/epic/ex-act-tool/suite-of-tools/ex-act/en/</a>). The methodological basis for these two tools is based on the 2006 IPCC guidelines and the Clean Development Mechanism (CDM) methodologies.</p> <p>Historical data and projections are derived from national statistics and expert consultations, respectively, based on realistic prospects for growth in the economy, population and technological developments. The baseline scenario was designed as an extension of the measures and policies in place before 2015 and the mitigation scenario as those in place after 2015. 2015 corresponds to the year of the adoption of clear policies in the country in favor of climate change mitigation both in the Intended Nationally Determined Contribution (INDC) and the National Climate Change Policy (NCCP) published in 2016.</p>
ii. For Parties whose nationally determined contributions contain non-greenhouse gas components, information on the assumptions and methodological approaches used in relation to these elements, if applicable.	N/A
iii. For climate drivers included in Nationally Determined Contributions not covered by the IPCC guidelines, information on how climate drivers are estimated.	N/A
iv. Additional technical information, if required.	N/A
g. The intention to use voluntary cooperation under Article 6 of the Paris Agreement, if applicable.	
The Republic of Haiti intends to use financial mechanisms and voluntary cooperation as defined in Article 6 of the Paris Agreement	

## **6. FAIRNESS AND AMBITION**

**A** Both LDCs and SIDS, the percentage of GHG emissions of the Republic of Haiti in relation to total global emissions is 0.02%, which is extremely negligible. Indeed, its per capita GHG emissions are estimated at 1t of CO<sub>2</sub> equivalent and are among the lowest on the planet. Nevertheless, clinging to the principle of responsibility

As a joint but differentiated from the UNFCCC and wishing to make its modest contribution to the achievement of the objective of the Paris Agreement relating to limiting the increase in the global temperature of the planet to 2°C or even 1.5°C compared to pre-industrial levels, the Republic of Haiti intends to carry out transformations in the main GHG-emitting sectors, in particular energy, waste and AFOLU. Thus, by 2030, it intends to reduce these emissions by 32% compared to the baseline scenario, i.e. an increase of 1% compared to the initial NDC. It should be noted that the level of emissions in the reference case has been revised downwards following the inclusion of new assumptions for the growth outlook of the economy that have been significantly reduced. This level of ambition has been guided essentially by the narrowness of our island territory and the stage of our socio-economic development.

## **7. NATIONAL ADAPTATION GUIDANCE**

Adaptation remains the Republic of Haiti's top priority in the fight against climate change. The main policy directions on the issue, including plans and programmes, are set out in the PNCC, the NAPA and the NAP currently under development.

Thus, this updated version of the NDC preferentially focuses on a set of measures to be prioritized in order to enhance the resilience of the country's various socio-ecological systems and sectors, including agriculture, livestock, fisheries, water resources, health, energy, tourism, road infrastructure and education.

## 7.1 SECTORAL ADAPTATION MEASURES AND SOCIO-ECONOMIC IMPACTS

The following table presents these measures and their contribution to national priorities and the SDGs.

**Table 6. NDC adaptation measures and their relationship to national priorities and the SDGs**

Sector	Accommodation	Indicators (IOV)	Links to SDG7	Costs Estimated in millions from US\$
Agriculture	Use and promotion of protectionist farming practices and agroforestry	Number of farmers trained	A grid of seven SDG icons corresponding to the measures listed. The icons are: 1 Pas de pauvreté (No poverty), 2 Faim à zéro (Zero hunger), 3 Bonne santé et bien-être (Good health and well-being), 6 Eau propre et assainissement (Clean water and sanitation), 12 Consommation et production responsables (Responsible consumption and production), 13 Mesures relatives à l'adaptation contre les changements climatiques (Measures related to adaptation against climate change), and 14 Vie aquatique (Life below water).	151,00
	Cultivation of species and varieties adapted and resilient to climate change	Percentage of introduced varieties and species		303,00
	Implementation and implementation of integrated pest management systems	Existence of integrated pest management systems		76,00
	Promotion and establishment of soil protection and conservation structures	Quantity of km of protective structures established		303,00
	Construction of lakes and hill reservoirs for watering crops in dry periods	Number of lakes and reservoirs built		454,00
	Protection, management and development of watersheds	Number of hectares of developed land		605,00
	Training, Education and Awareness of Farmers	Percentage of farmers trained and sensitized		76,00
Breeding	Practice and promotion of semi-intensive livestock farming	Development of training modules	A grid of four SDG icons corresponding to the measures listed. The icons are: 1 Pas de pauvreté (No poverty), 2 Faim à zéro (Zero hunger), 3 Bonne santé et bien-être (Good health and well-being), and 6 Eau propre et assainissement (Clean water and sanitation).	91,00
	Forage production and silage practice to cope with periods of scarcity	Tonnes of fodder and hay produced		76,00
	Implementation and implementation of integrated animal pest control systems	Presence of control devices in use		45,00
	Breeding of suitable species and breeds and resilient to climate change	Percentage of breeds and improved species Introduced		378,00

7 The SDGs mentioned in each section take into account all the measures of the sector concerned

Sector	Accommodation	Indicators (IOV)	Links to SDG 7	Costs Estimated in millions from US\$
	Establishment of hill reservoirs for watering livestock in periods of drought	Number of lakes and reservoirs built		303,00
Fishing	Adoption of innovative and efficient fisheries and aquaculture techniques	Level of progress (%) in fisheries revenues and productivity	    	76,00
	Fish aggregating device (FAD) installation	Number of Concentrating Devices Installed		151,00
	Protection and restoration of mangrove ecosystems and coral reefs	Restored mangrove and reef areas		605,00
	Construction of hill reservoirs to promote and strengthen aquaculture	Number of Detainees Built		303,00
	Improvement of fishing equipment and equipment in the face of new climatic conditions	Quantity of equipment and improved materials provided		227,00
	Strengthening the associative and technical capacities of fishermen	Number of anglers trained and supervised		45,00
	Establishment of a weather forecasting system for the benefit of fishermen	Existence of a weather forecasting system		151,00
Resources in water	Construction of lakes and hill reservoirs and drilling of wells in appropriate areas	Number of lakes and reservoirs built	   	303,00
	Rational use of water at the household and industrial levels	Volume of wastewater at household and industrial level		30,00
	Implementation of more effective and efficient irrigation systems (e.g. drip irrigation)	Increase (%) in irrigation systems implemented		303,00
	Improvement and management of tree cover to better recharge the water table	Number of hectares of land restored		454,00

Sector	Accommodation	Indicators (IOV)	Links to SDG 7	Costs Estimated in millions from US\$
	Promotion and application of soil and water conservation techniques	Number of hectares of land conserved		76,00
	Treatment and reclamation of wastewater and domestic water	Volume of water treated and recovered		227,00
	Implementation and operation of a system for the management and control of Water quality	Existence of the management and control system for Water quality		61,00
Infrastructure Road	Durable paving and proper sizing of road drainage systems	Quantity of kilometres paved and well dimensioned		303,00
	Revegetation of road network edges and embankments	Quantity of kilometres of vegetated ledges and embankments		151,00
	Erection of retaining walls in road nooks and crannies in steep places	Number of kilometres of retaining walls erected		530,00
	Afforestation, reforestation and protection of dominant road slopes	Number of hectares of land afforested or reforested		605,00
Coastal areas	Restoration (regeneration) and maintenance of mangrove ecosystems	Regenerated and restored mangrove area		681,00
	Protection of coral reefs and seagrass beds	Protected area		76,00
	Prohibition of construction of facilities vulnerable to coastal hazards	No new vulnerable facilities		45,00
	Establishment of protective structures (mechanical or biological) at the level of the coasts	Number of km of protective structures established		227,00
	Implementation of measures to combat sargassum	Existence of measures to combat sargassum		76,00

Sector	Accommodation	Indicators (IOV)	Links to SDG 7	Costs Estimated in millions from US\$
Health	Education related to the protection of the coastline and the marine environment	Number of trainings completed and participants trained		151,00
	Meticulous management and wastewater treatment	Number of wastewater treatment plants installed	    	151,00
	Reduction in the use of agricultural chemical inputs (fertilizers and pesticides)	Percentage of input used		45,00
	Strengthening systems for the prevention and treatment of climate-related diseases	Improved performance of rugged devices		757,00
	Adequate equipment of health facilities (dispensaries, hospitals, etc.)	Existence of equipment in health establishments		757,00
	Establishment of health and environmental education programmes	Existence and implementation of health and environmental education programmes		303,00
	Strengthening the capacity of the health workforce	Number of training courses held and rate of staff trained		151,00
Habitat	Spatial planning and urban sanitation	Number of km of streets cleaned up and urban areas developed	     	908,00
	Afforestation, reforestation and/or reforestation of bare areas	Number of hectares of land afforested or reforested		605,00
	Propagation, regeneration and management of mangrove stands	Regenerated and restored mangrove area		454,00
	Protection of coral reefs and seagrass beds	Area of coral reefs and seagrass beds protected		151,00
Total				13000,00



## 8. LOSS AND DAMAGE

# Given

the magnitude of the observed and projected adverse impacts of extreme and slow-acting climate events on key socio-economic sectors and As a major ecosystem of the country, the issue of loss and damage is a major handicap for the national sustainable development process. Thus, the Haitian State, in this revised version of the NDC, highlights this issue by providing a non-exhaustive list of measures envisaged to deal with it, in particular to avoid, reduce and address the inevitable negative impacts of climate change (see Table 7). However, he takes the opportunity to call on the international community to expand the scope of expertise and actions of the Warsaw International Mechanism on Loss and Damage (WIM) and to address the issue of loss and damage separately from adaptation now that the "science of attribution" has become more and more common. Significant progress has been made<sup>8</sup>.

**Table 7. Non-exhaustive list and estimated costs of loss and damage solutions**

Vulnerable sectors	Alternatives	Estimated costs in US\$ million
Agriculture	Establishment of an Insurance Program – Agriculture	120,00
	Promotion of solidarity economy programmes between farmers	105,00
	Creation of a system of mandatory declaration to farmers in order to allow their systematic registration	45,00
Breeding	Implementation of an Insurance Program – Livestock	108,00
	Promotion of solidarity economy programs between livestock farmers	90,00
	Creation of a system of mandatory declaration to farmers in order to allow their systematic registration	45,00
Fishing	Establishment of an Insurance Program – Fishing	96,00
	Promotion of solidarity economy programmes between fishermen	60,00
	Creation of a mandatory reporting system for fishermen to allow their systematic registration	45,00
Water Resources	Afforestation of strategic hydrogeological locations	120,00

8 Herrera et al., 2018. Exacerbation of the 2013-2016 Pan-Caribbean drought by anthropogenic warming. Geophysical Research Letters, 45, 10619-10626.  
 Patricola, C.M. and Wehner, M.F., 2018. Anthropogenic influences on major tropical cyclones. Nature, Volume 563.

Vulnerable sectors	Alternatives	Estimated costs in US\$ million
	Water supply and distribution in areas of scarcity	180,00
Coastal areas	Population relocation	150,00
	Compensation and reparations for victim households	210,00
	Conversion of the use of coastal areas	78,00
	Adjustment of the rib reinforcement structures	96,00
Road infrastructure	Reconstruction and repair of damaged roads or sections	600,00
	Repair, reconstruction and reinforcement of drainage systems	180,00
	Relocation and reconstruction of vulnerable and dangerous roads	300,00
Health	Implementation of a Health Insurance for All program	360,00
	Creation of national funds for compensation for loss and damage related to CC	240,00
Habitat	Population relocation	150,00
	Provision of an Insurance Fund – Habitat/Housing	360,00
	Repair and reinforcement or reconstruction of houses	222,00
	Restoring and enhancing natural ecosystems	120,00
Energy	Establishment of forest energy	300,00
	Harnessing solar, wind and hydro energy sources	600,00
Total		4980,00

## **9. INSTITUTIONAL FRAMEWORK AND MEANS OF IMPLEMENTATION**

**L**he cross-cutting nature of the issue of the fight against climate change militates in favour of the strong and active involvement of all vital sectors of national life. This being recognized, any policy and any related initiative must be part of a multisectoral and/or multi-stakeholder dynamic with a view to building an integral vision of the approach to be adopted and which must culminate in an effective and coordinated fight against phenomenon.

To this end, the implementation of the updated NDC will be based on a consensual foundation at the national level where all sectors of development and all components of society will be involved. This consensus will necessarily involve raising awareness among all categories of the population and all sectors about the impacts of climate phenomena at the general level and on each sector in particular.

To this end, the institutional framework to be promoted will be based on the development of a pragmatic multisectoral partnership that is piloted.

### **PRAGMATIC MULTI-SECTORAL PARTNERSHIP:**

It will be designed according to a framework and coordinated mechanisms for consultation and action. In other words, this framework should facilitate the involvement of all key development sectors on which the implementation of the said NDC will depend. Ultimately, it is a partnership framework that will not only help to integrate climate change into sectoral dynamics, but will also facilitate the development of sufficient synergies to better coordinate interventions.

Today, the environment sector can count on a pool of partners ready to work together according to an institutional architecture, on specific issues related to climate change that require a concerted approach. As such, the establishment of the National Committee on Climate Change (CNCC) made up of a set of sectoral ministries, representatives of local authorities, civil society, the private sector, the University, among others, must be considered as a fairly important step in the right direction. The CNSC will serve as an operational arm for the Climate Change Directorate (DCC) of the Ministry of the Environment where issues related to the design, development, evaluation and monitoring of actions to combat the harmful effects of climate change will be discussed.

### **OPTIONAL TNCC TASKS:**

In addition to the technical and strategic aspects that the CNSC must address, it must be able to support the Ministry of the Environment through the DCC in the mobilization of resources for the implementation of the actions included in the NDC. That said, one of the segments of the CNCC to be strengthened is the one in charge of negotiations and research for financing, mobilization of human resources and technology transfer. This segment will need to be proactive and devote much of its operationalization time to the planning and negotiation of framework agreements in order to find the resources needed to implement the mitigation and adaptation measures provided for in the NDC.

In this perspective, the overall financial envelope for the implementation of the actions provided for in the initial NDC was estimated at USD 25.387 billion, including USD 16.614 billion for adaptation actions and USD 8.773 billion for mitigation actions. However, with regard to the mobilization of these resources, little consideration has been given to the national effort, which, despite its modest size, remains an important source of resources that, if judiciously used, can make a valuable contribution to the fight against climate change. In this sense, for the implementation of this revised NDC, funds from the public treasury must not be neglected.

In this vein. Significant advocacy must be made to the country's political and financial authorities to ensure that more resources are devoted to the implementation of the NDC, the total cost of implementation of which over the period 2021-2030 is estimated at 22.036 billion US\$13 billion for adaptation initiatives, US\$4.98 billion for loss and damage, and US\$4.056 billion for mitigation. In the same vein, arguing the impact of climate change on investment, the contribution of the private business sector must also be stimulated.

In addition to these contributions that should be taken into account, the sources identified in the 2015 NDC remain valid, such as the Green Climate Fund, the Adaptation Fund, the Global Environment Facility, multilateral development banks, Haiti's traditional donors as well as bilateral cooperation agencies (Norwegian Cooperation, JICA, USAID, Canadian Cooperation, AFD, etc.) and multilateral cooperation.

The amounts indicated above also include financial support for capacity building and technology transfer.

A financing strategy for the NDC will be developed and implemented. It will include the mechanisms provided for in Article 6 of the Paris Agreement and the contribution of the private sector to climate finance.

## **10. TRANSFER OF TECHNOLOGIES AND STRENGTHENING OF NATIONAL CAPACITIES**

**P**For the effective implementation of the various measures mentioned in this NDC, it is important to considerably strengthen the country's capacities on several aspects, including those relating to vulnerability assessment, the development of climate programmes and projects, the establishment of appropriate inter-institutional coordination mechanisms, monitoring and evaluation of the implementation of the climate change.

evaluation and reporting of progress made as a result of the actions taken. In addition, for more significant impacts, the processes of capacity building and resource mobilization must be combined with a process of technology transfer, particularly those that are appropriate to the Haitian context or selected as part of the process of assessing the country's technology needs (in particular, solar photovoltaic power plants, solar water pumps, etc.). fruit orchards, agroforestry, impluvium, water meter, progressive terrace, gabionnage and raised construction). All programmes or projects resulting from mitigation, adaptation and loss and damage measures will have to systematically include a capacity-building component.

The Republic of Haiti also plans to integrate capacity development into the Nationally Determined Contribution Implementation Strategy. In accordance with its National Policy for the Fight against Climate Change (PNCC), the emphasis will be on:

- The continuing training and development of civil service executives, civil service stakeholders, private sector and civil society on climate change vulnerability, adaptation and mitigation;
- The deliberate involvement of academic institutions in training programmes, the research and systematic observation of all aspects related to climate change to inform the regular updating of the Nationally Determined Contribution and participation in the global stocktake. In the agricultural sector in particular, the strengthening of the country's capacities in agro-climatic risk modelling and the use of adapted software such as the DSSAT will be strongly encouraged.
- The improvement of institutional governance, in particular through the revision of the legal framework of the implementation of the public education plan on climate change, definition of mandates, processes
- The definition of a National Plan for Climate Change and Development Education A sustainable project whose implementation will have to integrate the school curriculum from



## **11. GENDER MAINSTREAMING IN THE NDC**

**P**Several studies have highlighted the differentiated vulnerability of girls and women to the negative impacts of climate change (IPCC, 2014)<sup>9</sup>. The latter generally have a higher degree of vulnerability to adverse climatic conditions than humans and therefore deserve special consideration in the development and development of the and the implementation of strategies to respond to climate change risks. At the same time, it is also recognized that a gender-responsive approach is an important factor in ensuring the success of effective and sustainable adaptation and mitigation initiatives (Huyer, 2016)<sup>10</sup>.

In this perspective, during the process of this first revision of the NDC, a special effort was made not only to include women and girls in the consultation workshops on the identification of adaptation and mitigation measures, but also to retain certain measures that will have a positive impact on their living conditions and that can contribute to their empowerment. In addition to this participation and involvement of women and girls in the decision-making process of adaptation and mitigation measures to be prioritized in this updated version of the NDC, there has been a critical analysis of the integration of gender issues into climate change policy documents, including the original NDC, and a key informant consultation on areas for improvement.

In recognition of a significant deficit in the consideration of gender concerns in national climate change policies and initiatives, the implementation of this updated version of the NDC will seek to:

- Promote initiatives that address the specific needs of girls and women, including those in situations of great vulnerability;
- Establish a specific working group on gender and climate change;
- Have at least one gender focal point sitting on the CNSC;
- Strengthen girls' and women's access to relevant information on change climate technologies;
- Involve gender experts in the development and implementation of monitoring frameworks-evaluation of actions to combat climate change;
- Generate and disclose gender-specific data; and
- Supporting gender mainstreaming in the national development planning process, particularly in the allocation of financial resources.

9 IPCC, 2014. Summary for Policymakers. In Climate Change 2014: Impacts, Adaptation and Vulnerability.

10 Hyer S., 2016. Gender equality in national climate action: planning for gender-responsive nationally determined contributions. UNDP, 40p.

## **12. MONITORING, EVALUATION AND REPORTING**

**L**he monitoring and evaluation and reporting was a major limitation in the implementation of the original NDC. Indeed, there was a lack not only of data collection related to the implementation of the measures chosen, but also a lack of regular reporting on the subject.

Despite the development of an implementation strategy that specified ways and means to achieve the country's mitigation ambitions and adaptation priorities, it was difficult to report on the status of the NDC implementation process. This situation was explained in particular by the persistence of a particularly difficult socio-political situation, which was hampering, *inter alia*, the establishment of appropriate inter-institutional mechanisms essential for monitoring, evaluation and reporting activities. Nevertheless, the Haitian government, through the MDE, has not haggled over efforts to develop a prototype of an MRV (Measurement, Reporting and Verification) system that would support the monitoring and evaluation system and report of this updated NDC.

The said MRV system prototype consists of two (2) main segments, including a coordination segment and an operational segment. At the centre of the coordination segment is the CNSC coordinated by the MDE, through the AFC and under the leadership of the Prime Minister, while at the operational level there are several working groups whose main mandate is to collect data in their fields of competence and to make a significant contribution to the production of reports on the implementation of the measures adopted in this updated version of the NDC. As foreseen in the prototype of the national MRV system, one of the first tasks of the entities involved in the monitoring, evaluation and reporting of the updated NDC is the definition of specific, measurable, realistic, relevant and time-bound indicators. These indicators should provide information on the performance of the updated NDC, particularly with regard to the state of natural resources, socio-economic conditions and financial flows.

## 13. CONCLUSIONS

**E**Carried out in a precarious socio-political context combined with an exceptional situation caused by the new coronavirus pandemic, the updated version of the Republic's NDC presents the efforts that the country intends to make to contribute to the global fight against climate change, in particular the objectives of containing the increase in the number of global average temperature to 1.5C above pre-industrial levels and reduce the negative impacts of climate change. These efforts have been largely guided by the principle of "common but differentiated responsibilities and respective capabilities" that form the bedrock of the UNFCCC and are reflected in the Paris Agreement.

This updated version of the NDC has been informed by a participatory and inclusive process that can promote its ownership at the national level. However, as a small island developing State, the Republic of Haiti will not be able to do so alone, it will need sustained support from the international community. This support should not only be financial, but should also include aspects relating to capacity building and technology transfer.



