



MOROCCO

NDC IMPLEMENTATION IN MOROCCO THROUGH GREEN INVESTMENTS BY PRIVATE SECTOR

A SCOPING STUDY

MARCH 2021



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT





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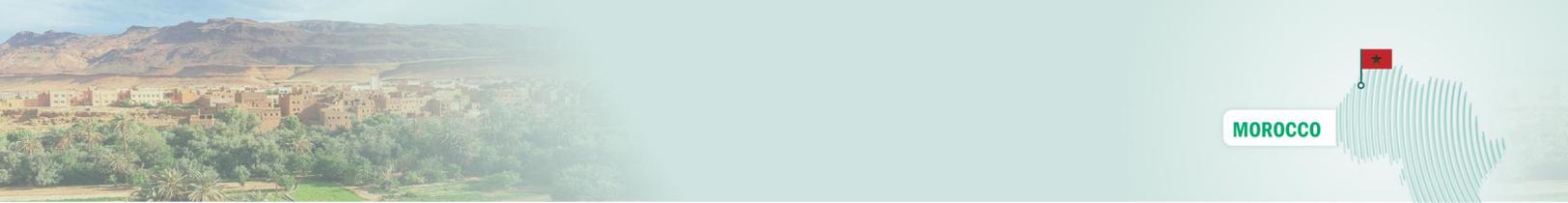
The African Development Bank

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FOREWORD

The Ouarzazate solar complex in Morocco stretches over 3,300 hectares in the desert and boasts a tower that reaches 243 meters into the sky.

The project, which supplies electricity to over one million people, is one of the largest of its kind in the world and represents a powerful symbol of Morocco's bold green energy ambitions.

Despite a complex environment, the Kingdom has embraced the opportunities offered by the energy sector of the future and is building a compelling investment case for buyers in this 21st century industry.

Like other African countries, Morocco has recognized that climate change poses a challenge to sustainable development and the consolidation of economic growth.

As a sign of their commitment to fighting climate change, 54 African countries have ratified the objectives of the Paris Agreement, which will cost an estimated \$1.2 trillion to implement by 2030. It is expected that 75% of this cost will be met by the private sector, whose participation in climate change actions must be strengthened and guided towards bankable and green investments on the continent.

In 2016, Morocco ratified the Paris Agreement and developed its Nationally Determined Contributions (NDC), as stipulated in the climate change treaty. Among other goals, Morocco commits in its NDC to reducing Green House Gas emissions by 42% by 2030, which places it

among the top countries in the world in terms of such commitments.

Shortly after signing on to the Paris Agreement, Morocco adopted a National Strategy of Sustainable Development 2030, and, in parallel, created a National Commission on Climate Change and the National Commission on Biodiversity.

Currently, the government is working on still more ambitious targets to propose at COP 26, to be held in 2021 in Glasgow. Morocco has notably identified domestic priorities where measures are needed for climate change adaptation and mitigation, such as in the energy, water, agriculture, and waste management sectors.

In the energy sector, Morocco aims to develop an energy mix that includes 52% renewable energy by 2030. In this regard, the country launched a solar program (2,000 MW) in Ouarzazate in November 2009, and a wind program (2,000 MW) in Tangier in June 2010.

Morocco, currently with the Bank's largest active portfolio, has clearly set its sights on combatting global warming in order to preserve the environment. At the same time, the country tries to promote resource development, job creation, and greater industrialization.

The African Development Bank is committed to further supporting Morocco's vision for a greener economy.



The Bank has invested in multiple power generation projects, including solar, wind and hydroelectric sources.

In the last decade, the African Development Bank has been heavily involved in modernizing the country's energy infrastructure, with a total contribution of \$1.6 billion, of which 23% was sourced from the Clean Technology Fund.

In solar energy, the Bank, with a total contribution of \$485 million, was the first financial contributor to the initial phase (160 MW) of the Ouarzazate solar complex (with a total capacity of 580 MW) under a public-private partnership.

The Bank has also supported wind power through an 850 MW integrated wind project, which is being developed under a PPP, and the 350-megawatt Abdelmoumen hydro pumped energy transfer station (STEP) in the province of Taroudant.

The country's businesses have strong potential to support green growth and the green economic recovery post COVID-19.

In addition to these initiatives, the kingdom's private sector was selected under the Fund for African Private Sector Assistance (FAPA) to receive support to promote its contribution to achieving the country's NDC.

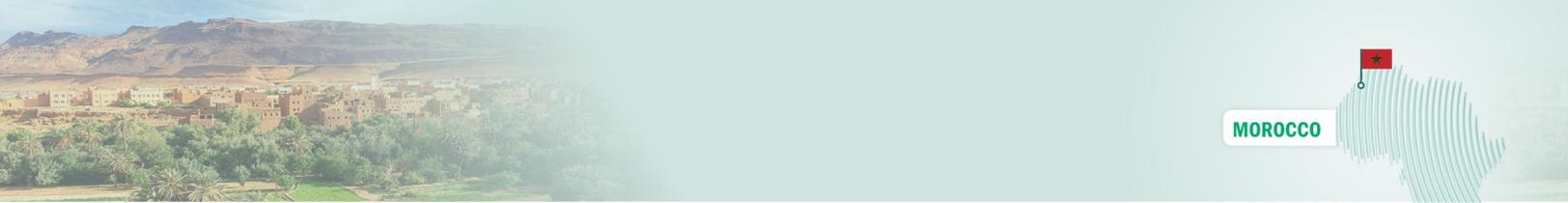
All these actions will strengthen Morocco's capacity to mobilise financial resources from the private sector to implement the climate actions outlined in its NDC.

The Bank is pleased to present this report, which will help us build the private sector portfolio in Morocco's green business.

Director General for the Southern Region of Africa
Ms. Leila Farah Mokadem

Morocco Office
African Development Bank





ACKNOWLEDGEMENT

This study was prepared by a team from Stantec led by Ms. Komal Hassamal, Key Senior Climate Finance Expert with Mr. Mohamed Alaoui, Morocco Country Expert. The editing of this report was done by Ms. Daniella Bastien, editor. The quality of the report was reviewed by Prof. Kalame Fobissie, Team Leader, and supported by the team Ms Ozlem Duran, Key Sector Expert, Ms. Rebecca Lamas, Key Sector Expert, Ms. Virginie Quarre, Project Manager, Mr. Alessandro Beghelli, Project Manager Assistant. The communication and design of the report was done by Ms Justine Marchal, Communication Expert.

The team benefited from the comments, suggestions and collaboration with the Bank experts, development partners, key government officials, businesses that were interviewed as well as during an online validation workshop webinar on 25th June 2020 with 260 participants.

The government represented by the Ministry of Energy, Mining and Environment from the Direction of Climate Change, Biodiversity and Green Economy participated in the process of the preparation of this study Mr. Bouzekri Razi, Director, Mr. Rachid Tahiri, Head of Climate Change and Green Economy Division and Mrs. Houda Bouchtia, Director of Climate Enterprise initiative from the Confédération Générale des Entreprises du Maroc (CGEM).

We gratefully acknowledge the role of the senior staff of the Bank including Prof. Anthony Nyong, the Climate Change and Green Growth Director and Ms. Leïla Farah Mokadem, the Morocco Country Manager for spearheading this study. Their respective team Mr. Dorsouma Al Hamdou, Climate and Green Growth Division Manager, Mr. Brice Mikponhue, Principal Country Program Officer, Mr. Diego Fernandez de Velasco, Senior Climate Finance and Green Growth Consultant, Mrs. Balgis Osman Elasha, Principal Climate Change and Green Growth Officer, Mr. Wadii Rais, Financial Analyst, Mr. Mohamed El Ouahabi, Water and Sanitation Specialist, Ms. Sonia Borrini, Communications and Knowledge Management Specialist, Mr. Fahd Belbachir, Country Communication Specialist, Mr. Gerald Esambe, Senior Climate Change and Green Growth Officer, Mr. Fadekunayo Adeniyi, Climate Change and Green Growth Consultant were key to the finalization of the report.

The study was peer reviewed by the team from Natural Eco Capital in charge of designing climate change tools for SMEs in Morocco, Dr. Eugene Itua and Mr. Linus Orakwe.



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Exchange rates – July 2020

1 MAD = 0.0913 Euros

1 MAD = \$0.10453



LIST OF ACRONYMS

ACCF	African Climate Change Fund		Committee of Climate Change		Renewable Energy Fund
AF	Adaptation Fund	COALM	Coalitions in charge of water and waste	GEF	Global environment Facility
AFD	Agence Française de Développement	A		GHG	Greenhouse gases
AfDB	African Development Bank	CO2	Carbon dioxide	GIZ	German Agency for International Cooperation
AFOLU	Agriculture, Forestry, and Other Land Use	CO2e	Carbon dioxide equivalent	GVC	Green Value Chain
AMEE	Agence Marocaine sur l'Efficacité énergétique	COP	Conference of Parties	ICA	Infrastructure Consortium for Africa
ASAP	Adaptation of Smallholder Agriculture Program	COVAD	Coalition pour la valorisation des déchets	IFIs	International financial Institution
BINGO	Business and Industry Non-Governmental Organization	COVID	Coronavirus disease	IFC	International finance Corporation
BMCE	Banque marocaine	CTF	Clean Technology fund	IKI	International Climate Initiative
CCG	Caisse Centrale de Garantie	DHS	Moroccan Dirham	IMF	International Monetary fund
CDM	Clean Development Mechanism	DPSA	Dedicated Private Sector Set Aside	INDC	Intended National Determined Contribution
CGEM	General Confederation of Enterprises of Morocco	EBRD	European Bank of Reconstruction and Development	IPCC	Intergovernmental Panel on Climate Change
CIS	Inter-Ministerial Monitoring Committee	EE	Energy efficiency	KfW	German Development Bank
CNST-CC	National Scientific and Technical	EIB	European Investment Bank	M	Million
		EU	European Union	MAD	Moroccan Dirham
		FAPA	Fund for African Private sector Assistance	MCCP	Moroccan Climate Change Policy
		FDI	Foreign Direct Investment		
		GCF	Green Climate fund		
		GDP	Gross Domestic Product		
		GEFF	Green Economy Financing Facility		
		GEEREF	Global Energy Efficiency and		



MEME	The Ministry of Energy, Mines and Environment		the Environment and Sustainable Development	SDL	Société de Développement Local
MorSEFF	Morocco Sustainable Energy Financing Facility	PJD	Justice and Development Party	TA	Technical assistance
MRV	Monitoring Report Verification	PMR	Partnership for Market Readiness	UMDF	Urban and Municipal Development Fund
NAMA	Nationally Appropriate Mitigation Actions	PSF	Private Sector Facility	UNDP	United Nations Development Programme
NDC	Nationally Determined Contribution	PPP	Public–private partnership	UNFCCC	United Nations Framework Convention on Climate Change
NIF	Neighbourhood Investment Facility	RE	Renewable energy	UNICEF	United Nations International Children's Emergency Fund
OECD	Organisation for Economic Cooperation and Development	RTCM	Thermal Construction Regulation in Morocco	WB	World Bank
ONEM	National Environment Observatory	\$	United States Dollars	4C	Centre de Compétences Changement Climatique
OREDD	Regional Observatories of	SEFA	Sustainable energy fund for Africa		
		SEMED	Southern and Eastern Mediterranean		



SUMMARY

Like other African countries, Morocco has recognized that climate change constitutes a challenge to sustainable development and the consolidation of economic growth. The government submitted the Nationally Determined Contributions (NDC) in 2015 and it has been ratified in 2016. The country has also shown devotion to tackle climate change by organizing the Conference Of Parties 22 (COP22) in Marrakech.

The Morocco NDC presented three priority sectors for mitigation measures: Energy, Agriculture Forestry Other Land Use (AFOLU) and Waste; and ten priority sectors for adaptation measures: Water, Agriculture; Fishing, Forestry and Fight against desertification, Biodiversity, Health, Tourism, Housing, Town planning and territories.

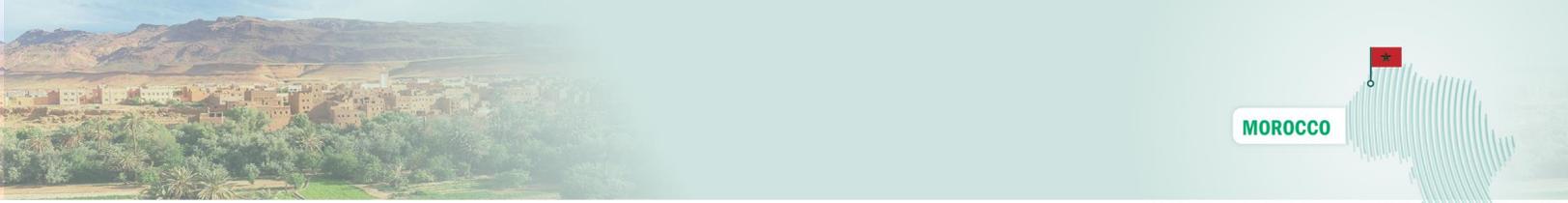
The implementation of Morocco's 2016 NDC targets is a challenge. The government has developed key sectoral strategies to pave the way for a green economy and estimated that \$50 billion in total funding is needed to achieve its 42% conditional targeted emissions reduction by 2030. Moreover, the estimation of adaptation measures is of minimum \$35 billion.

To limit GHG emission increase and to ensure a more resilient population, the country will need substantial financial support. This support depends on the availability of climate funding from the international community for both public and private sector investment in green projects. It is undeniable that the NDC targets will not be achieved without the private sector involvement.

This scoping study is to encourage the private sector to support the country in bridging the financial gap. The study identifies the challenges, opportunities and provides recommendations for upscaling NDC through private sector green investments, with a focus on the following seven key sectors: Climate Smart Agri-business and Forestry; Transport and Infrastructure; Green Building and Smart Cities; Renewable Energy; Waste Management; Water and Irrigation; and Financial Sector.

Experts suggest that considerable potential exists for closing the green investment gap by mobilizing private finance through the targeted deployment of technical assistance to improve the enabling environment. It is crucial to reform policies and incentives to give the right signals to investors, providing a strong framework to mobilise investment. In parallel, private sector investment can be achieved by using a range of proven instruments and mechanisms to help reduce the cost of capital and investment risks.

This report brings to the fore successful examples of private sector green investment projects in Morocco that implement the NDC in each of the seven sectors. For instance, the Ouarzazate solar complex, one of the largest of its kind in the world represents a powerful symbol of Morocco's bold green energy ambitions.



The study presents the role of the various development partners, and the landscape of international and national climate funds that provide support through various financial instruments for the private sector projects aligned with the NDC priorities. These funds are unfortunately not familiar to most of the entrepreneurs willing to develop greener businesses.

Generally, SMEs encounter major drawbacks in accessing finance and these barriers are more resistant concerning climate finance. The study showcases opportunity ideas in developing risk mitigation instruments for financial intermediaries. These challenges offer a platform for new business opportunities for the private sector.

The report identified 20 green private sector projects aligning with the NDC priorities that require investment support. The scoping study concludes by recommending modalities to upscale the implementation in various sectors of the Morocco NDC through private sector investment.



1. INTRODUCTION

The Government of Morocco submitted its climate action plan in the Intended Nationally Determined Contributions (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC) on June 5, 2015 in Paris for the Conference of the Parties 21 (COP21).

This COP 21 led to a new international climate agreement, the Paris Agreement, which is a key environmental accord that was adopted by nearly every nation including Morocco in 2015 to address climate change and its negative impacts. Following this, UNFCCC approved the INDC which is now known as the Nationally Determined Contributions (NDC) where it shows the Government of Morocco's commitment to setting out ambitious targets. The Paris Agreement was ratified by Morocco on 21 September 2016.

As Morocco is implementing measures to meet its targets, challenges and opportunities continue to arouse in achieving the set objectives. Morocco currently has a low Greenhouse Gas (GHG) emission rate, however, the emission levels are anticipated to increase significantly in the coming decades due to the country's continuing economic development, especially in the energy, agriculture and transport sectors. The vulnerability of Morocco to climate change impacts is also recognised in its NDC, which forecasts that the implementation of adaptation actions between 2020 and 2030 will cost \$35 billion for the vulnerable sectors of water, forestry and agriculture alone. The NDC recognises the importance of risk mitigation and investments in adaptation actions stating that "adaptation to climate change is the cornerstone of any program or policy on sustainable development". To limit GHG emission increase and to ensure a more resilient population, the country will need substantial international financial support for investment in green projects, to meet the conditional targets as defined in the NDC.

In 2020, the NDC, developed and submitted to the UNFCCC in 2015, is being revised to enhance its targets for the upcoming Conference of the Parties (COP 26) in Glasgow. GIZ is leading on this exercise¹ to support the Government of Morocco, with the assistance of various donors, including the Bank.

International agreements, such as the 2030 Agenda for Sustainable Development, the Addis Ababa Action Agenda and the Paris Agreement on Climate Change all strongly emphasize the critical role of the private sector in achieving development outcomes, both as a source of finance as well as know-how sharing. There is also a clear recognition across the development co-operation community of the significant position private sector actors can play in supporting the implementation of the NDC. However, many barriers hinder efforts to build resilience and to invest in clean technologies and environmental solutions among businesses in

¹ The revised document should be ready by 2020. Noting that the COP 26 has been postponed due to the COVID-19 crisis.



developing countries, and Morocco is not an exception even though it is considered a leader in green investment in Africa.

The Scoping study starts with an overview of Morocco's context, its institutional and strategic framework in terms of climate change and then a synopsis of the status of the NDC implementation. The report presents the private sector landscape and the available climate funds for the country. It then identifies climate friendly opportunities in the seven (7) key sectors focused for this study. Central to this report is the identification of twenty (20) climate friendly private sector projects that require financing support (listed in a table in Annex 2). Finally, the study assesses the challenges associated with the NDC implementation and ends by proposing recommendations.



2. OBJECTIVE

The objectives of this scoping study are: (i) to assess challenges and opportunities for NDC implementation by the private sector and (ii) to support the private sector in accessing green financing for NDC implementation in Nigeria. This study focuses on seven (7) key sectors that include:

1. Climate Smart Agri-business and forestry;
2. Transport;
3. Green Building and Smart Cities;
4. Renewable Energy and Energy Efficiency;
5. Waste Management;
6. Water and Irrigation; and
7. Financial Sector.

This document can be used to inform the revision, development and implementation of the national NDC process and actions.



3. METHODOLOGY

3.1. Data collection and analysis

The methodological approach included primary and secondary data collection.

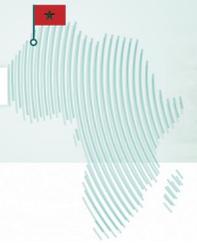
Primary data: The Stantec team developed a questionnaire that would ensure a harmonized data collection from identified stakeholders. Stantec relied on the existing network of the local expert, which has over 10 years' experience in the climate change and climate finance sector in Morocco. Furthermore, the key expert used her network to engage with donors and stakeholders in the country. The list of stakeholders engaged for this report is presented in Annex 1. The fieldwork at country level was of utmost importance with the aim of maximizing ownership and relevance, by harnessing inputs from various local stakeholders in consultation with Government, industry players, and sector-specific technical partners.

To collect the required data in a time-bound manner, the Stantec team undertook three approaches:

- **Approach 1 – secondary data:** The team did an extensive desk study for gathering the required data. The team organized the research activity required under this task with the team's knowledge about climate finance and the Moroccan NDC context. After a detailed desk study, the team identified the data gaps, and for bridging the data gaps the team adopted approach 2.
- **Approach 2 – primary data:** The team sought support from stakeholders in Morocco listed in Annex 1:
 - Reached out to the concerned stakeholders (ministries, private sector representatives, UNDP, 4C Maroc, GIZ etc.).
 - Discussed with the Bank local country office and regional team to understand the country context and the Bank's position.
 - Exchanged with various Bank's private sector Task Managers (Energy Efficiency, Industry, Waste Management and Transport divisions) responsible for Morocco to understand the challenges in the country.
 - Organized online meeting with the Ministry of Energy, Mining and Environment with the Director of Climate Change, Biodiversity and Green Economy, who is also the NDC focal point as well as with the Head of the same division.



- Organized meeting with the director of the Climate Enterprise initiative from the General Confederation of Enterprises of Morocco (CGEM), representatives of Moroccan Private sector.
- Shared with all stakeholders a summary of the scoping study in a factsheet format in French and English.
- Created a webpage in the Bank website with all information on Morocco and with relevant contact details for further consultation: <https://tinyurl.com/y3hk766d>
- Held an online consultation workshop in French on 25th June 2020 where all the participants (listed in Annex 1) were able to ask questions and provide comments; some of which were used to revise and finalize the first draft of this report.
- Presented the second draft of the scoping study to the NDC focal point on 23rd October 2020, the report integrates all the comments received by the government.
- Interview with the Bank Morocco country manager for this study.
- **Approach 3** - The pipeline development task involved a comprehensive technical and market analysis of the private sector, as well as the climate finance in Morocco. Information through secondary research techniques and existing know-how about the sector benefitted this task. This exercise enabled to find opportunities in the various sectors as outlined in the study. The country expert identified a potential energy efficiency project for the Bank to consider for accessing the Green Climate Fund for climate finance; and in this sense,
 - Engaged bilaterally with the Bank Task managers from the division of Industry, Transport, Energy Efficiency and waste management to review the identified project pipeline and seek their interest.
 - Coordinated two meetings with the Ministry of Energy and GIZ to introduce the Bank to the relevant stakeholders.



3.2. Limitations of the analysis

Limitations in this study are mainly due to the COVID 19 pandemic, and include the following:

1. Due to the COVID 19 lockdown:
 - It was impossible to be on a travel mission to meet all the stakeholders. Therefore, the interaction with the Bank and other stakeholders has been limited to phone calls and video conferences.
 - The reliance of the local consultant on his know-how of the country and online data collection were of utmost importance.
2. From the government's side, there is no data about NDC financing by the private sector in Morocco, due to the absence of a current Monitoring, Reporting, and Verification (MRV) system or a country registry for private sector climate change actions.



4. COUNTRY CONTEXT

4.1 Geography and population

Morocco spans from the Mediterranean Sea and Atlantic Ocean on the north and the west respectively, into large mountainous areas in the interior body, to the desert in the far south. Morocco is a Northern African country, located in the extreme north west of Africa on the edge of continental Europe.

According to the Haut-Commissariat du Plan (HCP 2020), the Moroccan population amounts to approximately 35.8 million. Morocco is a demographically young country with 27% of its population under the age of 15, 18% between the ages of 15 and 24, 42% between 25 and 54 years old, 7% between the ages of 55 and 64 and just 6% with 65 years and older. The median age of Moroccans is 29 years old as of 2018, with a life expectancy of 76 years of age.

4.2 Political aspects

Since its appointment in April 2017, Morocco's current Government coalition led by the Justice and Development Party (PJD) has rolled out the pro-poor reforms initiated under the previous Government, focusing mainly on social protection programs, job creation, and reducing economic disparities across the country. The Government is currently working to develop the "New Development Model" for the country, which will as well be the driving force of inclusive growth, social equity and sustainable development as analyse the implications and transformations engendered by the COVID-19 pandemic.

4.3 Economic and social context

Morocco is considered as a middle-income country. In recent years, the Moroccan economy has been characterised by macro-economic stability and low levels of inflation. The economy remains solid and mainly relies on exports, a boom in private investment, tourism and trade with the European Union. However, Gross Domestic Product (GDP) growth has slowed down since 2014, reaching 2.7% in 2019 (Nordea 2020). The slowdown is mainly due to a volatile agricultural sector and a slow growth in the tertiary sector. The non-agricultural sector growth was equal to 3.4% in 2019, boosting the economy thanks to the good performance of the phosphates, chemical and textile sectors. Before the Coronavirus pandemic crisis, the International Monetary Fund (IMF) expected the Moroccan GDP growth to increase by 3.7% and 4.1% in 2020 and 2021 as per Table 1 below. According to the updated IMF forecasts from 14th April 2020, due to the outbreak of the COVID-19, GDP growth is expected to fall to -3.7% in 2020 and pick up to 4.8% in 2021, subject to the post-pandemic global economic recovery.



Table 1: Main economic Indicators

Main Indicators	2017	2018	2019 (e)	2020 (e)	2021 (e)
GDP (billions USD)	109.71e	118.53e	119.04	124.54	132.77
GDP (Constant Prices, Annual % Change)	4.2e	3.0e	2.7	3.7	4.1
GDP per Capita (USD)	3,148e	3,366e	3,345	3,464	3,656
General Government Balance (in % of GDP)	-4.2	-4.0e	-4.0	-3.5	-3.5
General Government Gross Debt (in % of GDP)	65.1	65.0e	65.3	64.5	63.2
Inflation Rate (%)	0.8	1.9e	0.7	1.1	2.0
Unemployment Rate (% of the Labour Force)	10.2e	9.8e	9.2	8.9	8.5
Current Account (billions USD)	-3.75	-6.46e	-5.30	-4.75	-4.17
Current Account (in % of GDP)	-3.4e	-5.4e	-4.5	-3.8	-3.1

Source: IMF – World Economic Outlook Database, Latest available data

Note: (e) Estimated Data

The table 2 below presents a breakdown of the economic activity by sector in 2018. The agricultural sector employs nearly 37% of the workforce and contributes to 12.3% of GDP. In 2018, agriculture grew by 2.7%. Barley, wheat, citrus fruits, grapes, vegetables, olives, livestock and wine are the country's main crops. Economic growth relies heavily on this sector.

Morocco has a relatively small amount of mineral resources; phosphates being its main source of wealth in the mining sector. Industry contributes 26.1% of the GDP and employs 19.5% of the workforce. The main sectors are textiles, leather goods, food processing and electronics assembly. However, new sectors have been emerging: chemistry, automotive parts, computers, electronics and aerospace industry. The emergence of new sectors should allow the country to reduce its dependence on the agricultural sector. In 2018, the industrial sector grew by 3.1%.

The services sector accounts for slightly less than half of the GDP (49.5%) and employs 43% of the workforce. The services sector grew by 2.7% in 2018. It is spearheaded by real estate and tourism, which remain very dynamic.



Table 2: Breakdown of the Economic Activity by Sector in 2018

Breakdown of Economic Activity By Sector	Agriculture	Industry	Services
Employment By Sector <i>(in % of Total Employment)</i>	37.0	19.5	43.0
Value Added <i>(in % of GDP)</i>	12.3	26.1	49.5
Value Added <i>(Annual % Change)</i>	13.2	3.1	2.7

Source: World Bank, Latest Available Data. Because of rounding, the sum of the percentages may be smaller/greater than 100%.

Before the Covid-19 pandemic, Morocco observed an economic growth that has contributed greatly towards reducing poverty. Extreme poverty has almost been eradicated throughout Morocco. However, approximately 20% of the population (6.3 million people), remain vulnerable and are under continuous threat of falling back into poverty. The Human Development Index of Morocco is 0.65, the 11th highest Human Development Index in Africa (AfDB 2019).

4.4 Impact of Covid-19 on the economy

The broad near-term economic impact of the Covid-19 crisis on the Moroccan economy will be substantial, particularly as the economy was already facing the significant negative impact of a serious drought year. Morocco has closed its airspace during the pandemic. Trains and buses within and between cities were suspended. The cancellation of flights has inevitably created difficulties for both Moroccans abroad and foreigners in the country awaiting repatriation.

Tourism, which generates around 500.000 direct jobs (or 2.5 million including indirect jobs), air transport and some exporting sectors (notably the textile and automotive sectors) were impacted early on by shocks to both the demand and supply sides. In the tourism sector, restaurants and hotels are expected to encounter the hardest hit, with a drop of at least 25%. The number of arriving visitors dropped by 100.000 in March 2020 alone. The port of TangerMed continues to operate, but gas stations throughout the country have seen an 80% drop in revenues, according to figures from their professional federation. Not all sectors have been as adversely affected, especially in activities with limited face-to-face interaction, such as telecommunications and financial services, or indeed in other essential activities such as extractives, agribusiness and chemicals. The Central Bank decided on the 19th March 2020 to lower the key interest rate by 25 basis points to 2%. (OECD, 2020)



With major economic drivers of trade and tourism, which are key sources of foreign currency, seriously impacted, a significant recession in 2020 and probably 2021 is predictable. The Government forecasts the slowest growth in 20 years as a base case.

4.5 Climate vulnerability

The ND-GAIN index for Morocco is 52.3², the 2nd highest in Africa (ND-GAIN Scores for 2018). This index summarizes the country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. Morocco's score indicates that climate change-related hazards exist; however, the country is relatively well positioned to adapt.

The Moroccan climate is characterised by a high spatio-temporal variability. There are two major climatic zones in Morocco: The Northern regions (north of the High Atlas) which are influenced by Mediterranean weather and Atlantic climates, with differences between coastal, interior and mountain areas; and the Southern regions (south of the High Atlas), which have a semi-arid to desert climate with irregular rainfall.

The effects of climate change are becoming more evident in Morocco, which has been identified as a very vulnerable country by the 4th Assessment Report of the United Nations Intergovernmental Panel on Climate Change (IPCC 2014). Moroccan regions are affected by drought, increase in average temperatures, heat waves, changing rainfall patterns, extreme rainfalls, floods, and sea level rise. Since the 1960s, an increase of 1° C has been observed throughout the entire country. According to Morocco's third national communication to the UNFCCC, future climate trends in Morocco include rising temperatures of 1–1.5°C by 2050 and a decrease in average precipitation by 10–20% across the country (MEME 2016). This would lead to an increase in droughts, which would impact the agriculture and fisheries sectors and consequently influence the Moroccan economy; as evidenced by the 2016 drought. This was the worst drought in 30 years, reducing crop yields by 70% and contributing to a 1.7% deceleration in economic growth.

Water resources are projected to decline due to an increase in drought conditions. At the same time, water demand is expected to increase due to population growth, expanded irrigation schemes and a projected climate-induced rise in temperature. This situation will lead to potentially severe water shortages, particularly in the southern part of the country.

Finally, as a result of anthropogenic climate change, the sea level may rise between 26 and 82 cm before the end of the century (IPCC 2014). Two-thirds of Moroccan beaches are already threatened by erosion

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



and the risk of storms along the coast is increasing (Ministry of Energy, Mines and Environment -MEME, 2016). In addition, rising sea level poses a high risk to coastal urban areas and to the tourism sector.

Table 3 below provides the impact of climate change in the priority sectors of Morocco.

Table 3: Broad scale sectoral vulnerabilities and potential impact of Climate Change in Morocco

SECTOR	IMPACTS
Agriculture	<ul style="list-style-type: none"> - Crop loss and reduced yields, especially for rainfed crops - Increased incidence of pests and diseases, particularly the Hessian fly - Shortened growing season, especially for rainfed crops - Decreased water availability for irrigated crops - Desertification and loss of agricultural and grazing land
Fisheries	<ul style="list-style-type: none"> - Loss of habitat and spawning grounds - Changed fish migratory patterns owing to changes in upwelling and ocean circulation patterns - Loss of livelihoods for coastal populations - Increased potential for toxic algae blooms caused by warmer Mediterranean waters - Increased ocean acidification reduces productivity of crusteans and corals
Water resources	<ul style="list-style-type: none"> - Increased water scarcity, especially in the south, owing to reduced stream flows and surface water availability - Shifts in seasonal water availability, owing to factors such as earlier seasonal melt - Increased demand on water resources, particularly ground water - Increased demand for irrigation water - Increased salinization of coastal aquifers
Built infrastructure and human settlements	<ul style="list-style-type: none"> - Damage to and destruction of coastal infrastructure owing to sea level rise and increased coastal erosion - Potentially increased damage to infrastructure due to increased inland flooding - Potentially increased migration from rural to urban areas
Human health	<ul style="list-style-type: none"> - Increased loss of life owing to increased flooding - Increased incidence of some vector-borne diseases, such as dengue fever - Increased potential for water-borne diseases, especially diarrhea - Increased potential for malnutrition and stunting, especially during drought

Source: Morocco National Climate Change Profile, African Development Bank Group (2019)



5. INSTITUTIONAL AND STRATEGIC FRAMEWORK FOR CLIMATE CHANGE

5.1 Institutional framework

The institutional framework related to climate change has been progressively developed in Morocco to meet the requirements of the UNFCCC.

Morocco's National Committee for Climate Change, composed of representatives of public and private stakeholders, was established to oversee climate-related activities. The Ministry of Energy, Mines and Environment (MEME) chairs this Committee and also serves as the national focal point for the UNFCCC. An Inter-Ministerial Monitoring Committee (*Comité Interministériel de Suivi*, CIS) has been set up to review and validate the studies and reports prepared by Morocco as part of its UNFCCC commitments (NAP-GSP, 2017), including work related to Morocco's NDC and related communications, through an inter-agency coordination process led by MEME. A National Adaptation Committee has also been established by the Secretary of State for Sustainable Development and has invited CIS institutions to designate focal points on adaptation. The National Scientific and Technical Committee of Climate Change (CNST-CC) composed of national experts (public institutions, universities, and consulting firms) covers different topics related to climate change.

Morocco has nominated the Director of a Climate Change, Biodiversity and Green Economy from MEME Secretariat of State for Sustainable Development as NDC Focal Point and Designated National Authority for the Clean Development Mechanism (CDM), which evaluates and approves national CDM projects in the framework of the Kyoto protocol and serves as a focal point for the Green Climate Fund (GCF). The Moroccan Competence Centre for Climate Change (*Centre de Compétences Changement Climatique du Maroc*, 4C Maroc) provides capacity building and knowledge exchange on climate change across national and international stakeholders with regional and African outreach.

The First Morocco NDC submitted in 2016 at the UNFCCC is currently being revised in order to achieve the Paris Agreement goals. In this context, the NDC revision will enhance the adaptation measures and plans to dedicate at least 15% of its budget to implement adaptation programs in the most affected sectors, notably water, agriculture, fisheries and aquaculture, forestry and health, as well as the most vulnerable environments and ecosystems. Morocco will also significantly increase its ambition for mitigation but has been very well fleshed out in its First NDC. (UNDP NDC Support Programme).



5.2 Strategic framework

King Mohammed VI in his Throne Speeches of 2009 and 2010, called for comprehensive legislation on environmental management, and explicitly set “Green Growth” as a priority for Government action. The country’s revised constitution of 2011 reflected the need for sustainability by compelling the State and its agencies to work towards ensuring equal access to a healthy environment and sustainable development. In 2012, Morocco signed the Organisation for Economic Co-operation and Development (OECD) Declaration on Green Growth for socially inclusive and environmentally sound growth, highlighting Morocco’s positioning as the Middle East and North Africa (MENA) country with the firmest commitment to sustainable development agenda.

By organizing COP 22 in Marrakech in November 2016, Morocco took a leading role in advocating for the urgent need to combat climate change. The Marrakech accord emphasized the urgency to make additional resources available to developing countries with a focus on adaptation.

The policy directions, measures and initiatives related to climate change and the environment are set out in several strategic documents that have been developed and updated over the past decade. Following the release of Morocco’s 2009 National Plan to Fight against Global Warming, the country adopted the Moroccan Climate Change Policy (MCCP) in March 2014, which is the main climate change policy document. It provides the operational framework for developing a medium and long-term climate change strategy (up to 2040) and constitutes the basis for coordinating different measures and initiatives, based on the following four pillars:

Figure 1 : The four pillars of the Moroccan Climate Change Policy (MCCP) (MEME 2014)





The Climate Change Policy includes mitigation and adaptation components, as well as cross-cutting strategic horizontal actions. The elaboration of the strategic mitigation component as a Low-Carbon Development Strategy will take into account the Nationally Appropriate Mitigation Actions (NAMAs) covering the majority of economic, social and natural GHG emitting sectors. The adaptation component is accompanied by the current development of a National Adaptation Plan (NAP) and will aim at identifying priority activities to address urgent and immediate needs of adaptation.

The National Charter for Environment and Sustainable Development (*Charte Nationale de l'Environnement et du Développement Durable*) was developed in 2009 and translated into a framework law (Law 99-12) in 2014. Article 14 of the Charter laid the foundation for the National Sustainable Development Strategy (*Stratégie Nationale du Développement Durable*), adopted in November 2017.

In 2015, Morocco submitted its INDC that was ratified by Parliament in 2016. This document specifies an action plan for climate change mitigation and adaptation measures with various scenarios to ensure reaching the 2030 goal of limiting increase in temperature to 1.5°C.

Morocco also submitted national communications to the UNFCCC in 2001, 2010 and 2016. The Third National Communication (2016) includes GHG emissions projections to 2040. Since 2015, the Government has been working on a National Low-Carbon Development Strategy (*Stratégie Nationale de Développement Sobre en Carbone*), and a National Adaptation Plan up to 2030 (*Plan National d'Adaptation au Changement Climatique*).

Morocco is implementing actions to support the adaptation to climate change impacts, including actions through the National Water Strategy and Plan; National Plan for the Protection against Floods; Green Morocco Plan (focusing on agriculture); National Action Programme to Combat Desertification; National Strategy for the Planning and Development of Oases; and the Halieutis Plan (focusing on fisheries).



6. THE IMPLEMENTATION OF THE FIRST NATIONALLY DETERMINED CONTRIBUTIONS

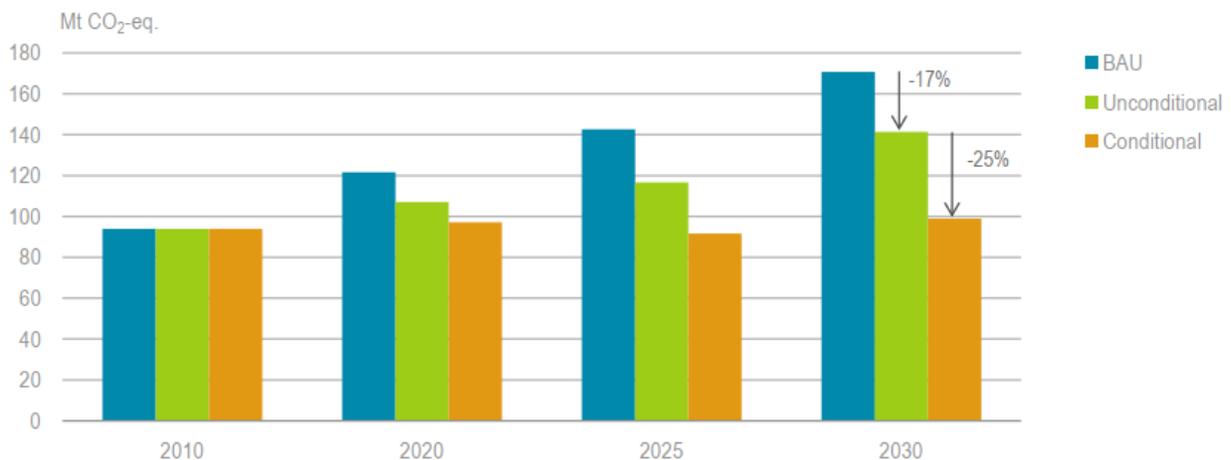
As indicated above, Morocco's NDC (2016) outlines mitigation and adaptation measures. Three priority sectors for mitigation measures were identified: Energy, AFOLU and waste; and ten priority sectors for adaptation measures: water, agriculture, fishing, forestry and fight against desertification, biodiversity, health, tourism, housing, town planning and territories.

6.1 Targets and budget

The NDC provides a climate action plan with unconditional and conditional targets. The unconditional targets are considered voluntary and implementable without outside support. Moreover, ambitious conditional targets are assumed to be set, conditional on external financial support.

In its NDC, Morocco commits to reduce GHG emissions by 42% by 2030 compared to BAU emissions, with an unconditional reduction target of 17% below BAU levels (including a 4% reduction in AFOLU actions) and a conditional target of an additional 25% reduction, subject to provision of technical and financial international support as illustrated in Figure 3 below.

Figure 2: Projected GHG emissions in different mitigation scenarios (IEA 2019)





In the 2016 NDC, the Government estimates that \$50 billion in total funding is needed to achieve its 42% targeted emissions reductions by 2030, including \$24 billion in new sources of finance and additional support compared to that received over the past years to meet the conditional components of the target, which was only \$600 million, most of it (\$575 million) in the form of concessional loans and the rest (\$25 million) in form of grants (GoM 2016, Driss and Naima 2019).

The proportion of Morocco's national budget dedicated to adaptation is a testimony to the scale of the challenge facing Moroccan society. As noted in this scoping study's introduction, Morocco forecasts that, between 2020 and 2030, the implementation of adaptation programs will cost a minimum \$35 billion for the most vulnerable sectors, namely water, forestry and agriculture.

The Annex 1 of Morocco's First NDC presents portfolio of mitigation actions for 2030 and has been used to estimate Morocco's mitigation contribution.

6.2 Key sectoral strategies

- **Mitigation Targets**

The implementation of Morocco's NDC is based on several strategies and national action plans, including the Low-Carbon Development Strategy (LCDS), which is being developed and takes its targets from the NDC, as well as clear and ambitious sectoral targets. The Government has developed key sectoral strategies, along with their respective targets for the implementation of Morocco's Contribution which are outlined in Table 4 below.



Table 4: Key Sectoral Strategies and Targets for the Implementation of Morocco’s Mitigation Contribution (GoM 2016).

	SECTORAL STRATEGIES AND ACTION PLANS	TARGETS AND MEASURES
Agriculture	Morocco Green Plan	<ul style="list-style-type: none"> • Improve the promotion of natural resources and their sustainable management. • Define the necessary policies to support sustainable growth. • Support for the modernization of irrigation infrastructure. • Improvement of agricultural water governance and sustainable management. • Promotion of gender, water resources protection, and energy conservation. •
Forest	Preservation and Sustainable Forest Management Strategy	<ul style="list-style-type: none"> • Develop forests and surrounding areas. • Finalize land demarcation and registry of forested areas. • Complete the suckering, renewal or afforestation of approximately 50,000 hectares per year, with a primary focus on natural species and support for high-quality forest research when rehabilitating territory.
Transportation	National Logistics Strategy (2010)	<ul style="list-style-type: none"> • Contribute to sustainable development by reducing disruptions (e.g., reduction of the number of tonnes per kilometer by 30% and reducing traffic density on freeways and within cities).
	Urban Public Transit Improvement Program	<ul style="list-style-type: none"> • Implement large-scale public transit powered by renewable energy in major urban centers. • Create a \$200 million support fund for urban road transportation. • Create a Taxi Fleet Renewal Program.



<p>Electricity Production</p>	<p>National Energy Strategy</p>	<ul style="list-style-type: none"> • Provide 52 % of the installed electrical power from renewable sources, of which 20 % is from solar energy, 20 % is from wind energy and 12 % is from hydraulic energy by 2030. • Achieve 15 % energy savings by 2030, compared to current trends. Reduce energy consumption in buildings, industry and transport by 15 % by 2030. The breakdown of expected energy savings per sector is 48 % for industry, 23 % for transport, 19 % for residential and 10 % for services. • Install by 2030 an additional capacity of 3,900 MW of combined-cycle technology running on imported natural gas. • Supply major industries with imported and degasified natural gas by pipelines.
<p>Waste</p>	<p>National Household and Similar Waste Program</p>	<ul style="list-style-type: none"> • Mainstream household waste management master plans and standardize them for all regions and provinces of the kingdom. • Improve the collection of household waste to achieve an urban collection rate of 100 % by 2030. • Establish landfill and recycling centers for household waste for the benefit of all urban areas by 2020.2
	<p>National Liquid Sanitation and Wastewater Treatment Program</p>	<ul style="list-style-type: none"> • Reach an overall urban sewerage connection rate of 100% by 2030. • Reach a 50 % volume of treated wastewater by of 100% by 2030. • Expand wastewater management services and reuse 50% of wastewater in in-land cities by 2020.



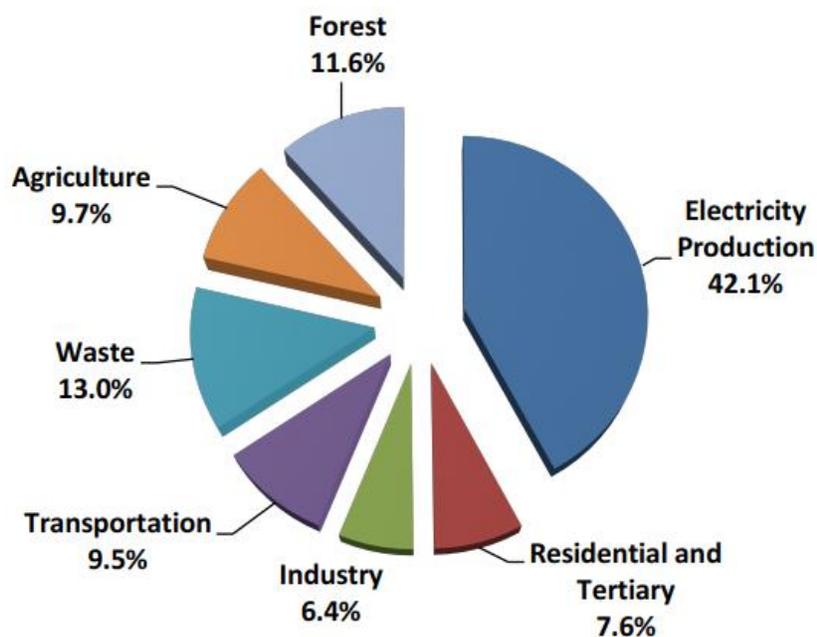
Table 5: NDC GHG related emissions reduction targets for the period 2020-2030 (Mt CO2e)

SECTOR	NDC GHG RELATED EMISSIONS REDUCTION TARGETS FOR THE PERIOD 2020-2030 (MT CO2E)	
	Unconditional Scenario (with AFOLU)	Conditional Scenario (with AFOLU)
Forest	29.9	60.7
Agriculture	25.0	50.8
Waste	33.5	68.1
Transportation	24.5	49.7
Industry	16.5	33.5
Residential and Tertiary	19.6	39.8
Electricity Production	108.6	220.4
Total	257.9	523.5

Source: NDC 2016



Figure 3: Distribution of the expected mitigation effort by sector to achieve the overall target (with AFOLU) between 2020 and 2030 (GoM 2016)



In terms of mitigation targets, it is clear that the effort focuses primarily on electricity production (42.1%), but also on waste (13%) and forestry (11.6%).

The aforementioned LCDS will coordinate mitigation objectives for all sectoral strategies and action plans, including energy, agriculture, transport, water, waste, forests, industry, housing and infrastructure. Morocco's ambition to mitigate GHGs is, to a large extent, based on a major transformation of the energy sector. This transformation is being conducted with the greatest political determination and aims to reduce the country's high energy dependence on imports, increase the use of renewable energy sources and meet the growing demand for energy to support socio-economic development and the well-being of its population.

- **Adaptation Targets**

The NDC describes Morocco's vision for adaptation, which involves several quantified sectoral goals for 2030 that are presented in Table 6.



Table 6: Main Adaptation Objectives (GoM 2016)

SECTOR	SECTORAL STRATEGIES AND ACTION PLANS	MAIN OBJECTIVES FOR 2030
Agriculture	<ul style="list-style-type: none"> Morocco Green Plan 	<ul style="list-style-type: none"> Extension of irrigation to new agricultural areas, over 260,000 hectares for an overall investment of \$3 billion. Equipping and modernizing irrigation systems for over 290,000 hectares for an overall forecasted \$2 billion.
Forests	<ul style="list-style-type: none"> National Strategy for Humid Areas National Strategy for the Monitoring of Forest Health Master Plan to Combat Wildfires Master plan for Reforestation National Action Program to Combat Desertification National Watershed Maintenance Plan Master Plan for Protected Areas National Development Strategy for the Development of the Aromatic Medicinal Plant Sector 	<ul style="list-style-type: none"> Protecting 1,500,000 hectares against erosion, which will include the prioritization of 22 basins, for \$260 million. Afforesting 600,000 hectares for \$46 million.
Fisheries and Aquaculture	<ul style="list-style-type: none"> Halioutis Plan 	<ul style="list-style-type: none"> Establishment of marine protected areas representing 10% of the Exclusive Economic Zone. Development of two hatcheries dedicated to restock five endangered coastal species. Renewal and modernization of 30% of the fleets, including with greener vessels equipped with observation systems. Restoration of 50% of damaged marine habitats. Increase by 50% the volume of sea products utilized and marketed.



<p>Water</p>	<ul style="list-style-type: none">• National Water Strategy• National Water Plan• Drought Management Plan• Guiding Plans for the Integrated Layout Water Resources• National Plan for the Protection Against Floods• National Liquid Sanitation Program• National Rural Sanitation Program• National Used Water Reutilization Program	<ul style="list-style-type: none">• Construction of three dams per year on average in order to reach 25 billion m³ in stocking capacity, which will require overall investments forecasted at \$2.7 billion.• Desalinization of seawater in order to reach a capacity of 500 million m³ per year for a forecasted cost of \$15 billion.• Recycling of wastewater in order to reach a capacity of 325 billion m³ per year for a forecasted cost of \$3 billion.• Transferring 800 million m³ of water per year from north to south for an overall investment of \$3 billion.• Improving the efficiency of the drinking water network with a national average target of 80%.• Connection to the water treatment network in urban areas at a rate of 100%.• Preserving water resources and natural habitats, and at improving the management of extreme climate events, for an overall investment of \$5.7 billion.
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6.3 Examples of green projects in the private sector that contribute to NDC priorities

In its NDC, Morocco presented a list of 55 mitigation actions for 2030 to achieve the conditional and unconditional GHG emission reduction targets. Morocco has developed a Green Investment Plan 2015-2030 in August 2014 (4C Maroc, Plan d'Investissement) but mostly presenting public sector projects or public-private partnerships (PPP). There is an absence of a Monitoring, Reporting and Verification (MRV) system to track NDC implementation, it is hard to have quantitative data and measure the contribution of the private sector to date. The lack of reporting on private climate finance and a harmonised standard tracking system make it difficult to estimate the current state of climate finance in the private sector.

The section below provides examples of flagship PPP as well as private projects that have thus far contributed significantly to the implementation of the NDC in the 7 focus sectors of this study. It is important to provide examples of success stories to inspire and incentivize business people to replicate and scale some of these projects. The size of the projects varies, each showcasing mitigation and/or adaptation measures.

6.3.1 Energy

There has been good progress in the energy efficiency and renewable energy sector through governmental programmes.

The deployment of the Moroccan Solar Programme (known as NOOR), which aims to develop a total power generating capacity of at least 2 000 MW by 2020 is described below.



BOX 1: THE OUARZAZATE SOLAR COMPLEX

The Ouarzazate Solar Complex has a target total capacity of 580 MW spread over four (4) power plants. The development of the complex is in three (3) main phases:

- **Phase I:** construction of a first 160 MW concentrated parabolic trough solar thermal power plant (CSP) (Noor Ouarzazate I) and common infrastructure that will serve all the phases of development of the Noor Ouarzazate complex (access roads, water and electricity supply, fence wall, telecommunications, security, etc.);
- **Phase II:** construction of two (2) concentrated solar thermal power plants with a total capacity of 350 MW, including a 200 MW parabolic trough power plant (Noor Ouarzazate II) and a 150 MW solar tower power plant (Noor Ouarzazate III); and
- **Phase III:** construction of a 70 MW photovoltaic (PV) power plant (Noor Ouarzazate IV power plant).

Each solar power plant of the Ouarzazate complex is built under a Public-Private Partnership (PPP) framework for private electricity generation in the Independent Power Producer (IPP) form, covering the design, financing, construction, operation and maintenance of the power plant concerned for a period of 25 years, for concentrated solar thermal power plants (CSP), and 20 years for the photovoltaic (PV) power plant.

In addition, the Noor Ouarzazate Solar Complex Project is also part of the Clean Technology Fund (CTF) Investment Plan for the promotion of concentrated solar thermal power in the Middle East and North Africa (MENA) region, which aims to develop CSP plants with a cumulative total capacity of one gigawatt (1 GW). This Investment Plan has been prepared with the countries of the region under the support of the African Development Bank and the World Bank. It enables participating countries to take advantage of their solar resources to contribute to the global fight against the effects of climate change, while significantly increasing the global installed CSP capacity.

FINANCING STRUCTURE:

SOURCE OF FINANCING FOR NOOR OUARZAZATE I PLANT PROJECT: CONCENTRATED SOLAR POWER PLANT	FINANCIAL INSTRUMENT	AMOUNT IN \$ MILLION
African Development Bank (AfDB)	Loan	194



Clean Technology Fund via African Development Bank and World Bank	Loan	197
French Development Agency	Loan	116
European Investment Bank	Loan	116
KFW German state-owned development bank	Loan	116
NIF/EU Neighbourhood Investment Facility of the European Union	Grant	35
BMU/KFW Kreditanstalt Fur Wiederaufbau (KFW) German Ministry of Environment	Grant	17
ACWA Power Consortium	Private equity	9
TOTAL		800

SOURCE OF FINANCING FOR NOOR OUARZAZATE II SOLAR COMPLEX: CONCENTRATED SOLAR THERMAL POWER, PARABOLIC TROUGH POWER PLANT		AMOUNT IN \$ MILLION
African Development Bank (AfDB)	Loan	116
Clean Technology Fund	Loan	196



French Development Agency	Loan	58
European Investment Bank	Loan	406
World bank	Loan	250
KFW German state-owned development bank	Loan	758
NIF/EU Neighbourhood Investment Facility of the European Union	Grant	104
BMU/KFW Kreditanstalt Fur Wiederaufbau (KFW) German Ministry of Environment	Grant	17
MASEN and private developers	Private equity	306
TOTAL		2,211

IMPACTS OF THE PROJECTS:

- 500 MW of solar capacity;
- Annual GHG reductions of 0.250 MT CO2e per year;
- Creation of 800 jobs between 2012 and 2014 and 50 permanent jobs thereafter;
- Increase 25% the share of renewable energies of the 2000 MW generation target of 2020;
- Trade balance improved (sell green energy to Europe at profitable rates and earn foreign exchange);
- Improve lives and livelihoods of people;
- Contribute to the Ouarzazate Neutral Carbon Convention in 2015;
- Benefit the Government, Moroccan Agency for Solar Energy (MASEN), National Electricity Authority (ONEE), private partners and the people of Morocco;
- Collaboration with the NGO Fondation Ouarzazate, which operates in the health sector.

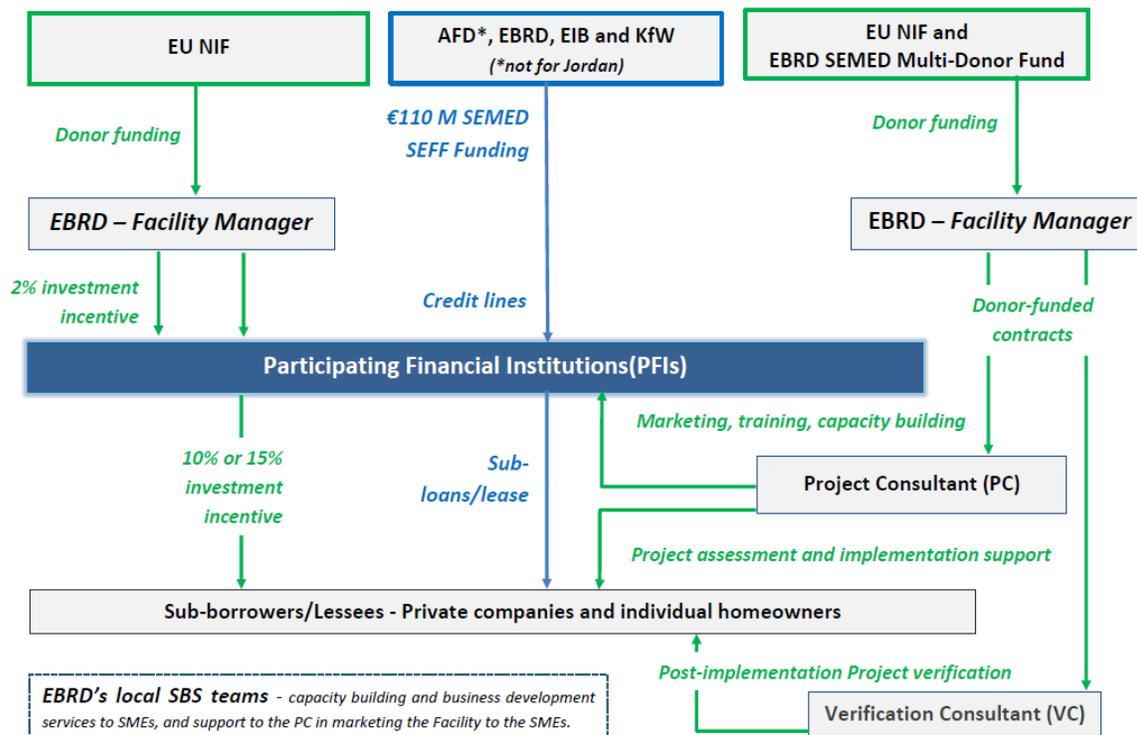
Source : AfDB, 2019

BOX 2: MOROCCO SUSTAINABLE ENERGY FINANCING FACILITY (MORSEFF³)

This sustainable energy financing facility is a mitigation of vehicle. The MorSEFF was established in 2015 by EBRD, EIB, KfW and AFD to promote investments in energy efficiency and renewable energy in the private sector in Morocco.

FINANCING STRUCTURE:

The facility has EUR 110 million available for loans, EUR 15 million for incentives (an EU grant), and EUR 5 million for technical assistance.



³ MORSEFF: Morocco Sustainable Energy Financing Facility



MorSEFF provides to prospective borrowers:

- Financing of up to MAD 3,000,000 (\$300,000) for small-scale projects available through a preapproved List of Eligible Materials and Equipment (LEME) and of up to MAD 50,000,000 (\$5,000,000) for larger or more complex investment projects.
- Investment incentives of 10% of financing amount funded by grants from the EU Neighbourhood Investment Facility (EU NIF).
- Technical assistance provided for project assessment and implementation by a dedicated Project Consultant, and verification of projects post-implementation by a Verification Consultant; both funded by grants from the EU NIF and EBRD's Southern and Eastern Mediterranean Multi-Donor Multi-Donor Fund (SEMED).
- Local distribution through Moroccan Participating Banks - *Banque Centrale Populaire* and *Banque Marocaine du Commerce Extérieur* (BMCE).
- The line is fully disbursed.

IMPACTS OF THE PROJECTS:

- More than 280 projects were financed through this facility;
- More than 20% energy and CO2 savings;
- This project was a success story in the private sector in Morocco. A new programme, MorSEFF *plus*, just started with new participating banks.

Source: EBRD 2014



6.3.2 Smart cities

BOX 3: THE SDL SALA NOOR FOR THE MANAGEMENT OF PUBLIC LIGHTING IN THE CITY OF SALÉ

Energy efficiency has frequently been referred to and used as a tool for carbon emissions mitigation (i.e., reducing greenhouse gas emissions from energy production and consumption in order to avoid climate change), however this project proves that it can also address a better supply of power by using more efficient lighting.

FINANCING STRUCTURE:

The SDL (Société de Développement Local) is an innovative Public-Private Partnership which operates at the municipality level. SDL SALA NOOR was created in 2014 and is 51% owned by the municipality of Salé, 48% by the company Oksa and the rest by the Energy Investment Company (SIE). Sala Noor is responsible for the management of public lighting in the city of Salé.

The company has drawn up an investment plan in order to ensure adequate public lighting, in terms of comfort and security while respecting the budget constraints of the municipality through the control of the energy bill. These investments include LED lamps, voltage reducing stabilizers, twilight clocks, etc.

IMPACTS OF THE PROJECT:

After two years of activity, an initial assessment was presented in 2016:

- 54% of planned investments over 5 years had been reached;
- The availability rate of light increased from 68% to 93%;
- The average intervention time fell from 96 hours to less than 26 hours;
- Energy consumption had been reduced by more than 5.5 million KWh.

Source : 4 C Maroc



6.3.3 Transport

BOX 4: AGENCE NATIONALE DES PORTS (ANP)- PORT UPGRADE

This project is about the rehabilitation of the Agence Nationale des Ports (ANP), the upgrade and the strengthening of the infrastructures to make them more climate resilient in the Moroccan ports of Agadir, Kenitra, Casablanca, Sidi Ifni, Tan-Tan and Larache.

The Project's objectives aim to support ANP in financing some components of its investment programme, with the target to preserve the ports' infrastructure assets, to improve the infrastructure resilience, and to integrate and mainstream climate change adaptation measures into ANP's infrastructure investments. This will lead to a systemic impact on how ANP incorporates climate change adaptation into its investments.

FINANCIAL STRUCTURE:

The EBRD's non-sovereign loan of up to \$46 million would be accompanied by the mobilisation of grant funding of \$6.2 million from the Global Environment Facility (GEF).

EBRD's loan and GEF's capex grant are expected to finance the project components below:

- Kenitra: refurbishment of port quays
- Agadir: strengthening of the main jet of the commercial port
- Agadir: refurbishing the fishing port's quays
- Agadir: Construction of a 3rd access to the port
- Larache: maintenance and refurbishing the fishing port's quays
- Casablanca: strengthening protective dikes
- Sidi Ifni: strengthening the platforms and medians of dock 5
- Sidi Ifni: set up of floating wharves in fishing port
- Tan-tan: strengthening and rehabilitation of berths

IMPACTS OF THE PROJECT:

- Improvement of climate change resilience in Moroccan ports;
- Introduction of international best practices for climate resilience and a climate risk management strategy;
- Update of technical guidance standards on climate resilience in ports.

Source: EBRD, 2020



6.3.4 Climate Smart Agri-business and forestry

BOX 5: MOROCCO DIGITAL AND CLIMATE SMART AGRICULTURE PROGRAM

The World Bank developed the concept of the Morocco Digital and Climate Smart Agriculture Program, which aims at increasing the adoption of digital and climate smart technologies in agri-food value chains in Morocco.

This program is the next phase of the Plan Maroc Vert⁴ (PMV). The proposed intervention focuses on 2 key areas of the Government's program: the diffusion and adoption of i) climate smart technologies and practices and ii) digital technologies in agri-food value chain. The Program will mainly focus on building the ecosystem and setting up the incentive schemes to enable the private sector to provide digital and climate smart technologies to farmers and agri-food SMEs so that they can adopt them. The program will be implemented by the Ministry of Agriculture, Fisheries, Rural Development, Water and Forestry (MARF).

FINANCIAL STRUCTURE:

Loan of \$200 million from the World Bank

IMPACT OF THE PROJECT:

- Farmers and agri-food SMES that have adopted climate-smart technologies and practices;
- Farmers and agri-food SMEs that have adopted digital technology;
- Creation of jobs in rural areas (especially for youth and women);
- Managing natural resources in a sustainable and climate resilient way;
- Income generation.

Source: World Bank, 2019

⁴ <https://www.casainvest.ma/fr/node/494>



6.3.5 Waste Management

BOX 6: THE MEKNÈS WASTE DISPOSAL AND RECOVERY CENTER

This waste management project is a mitigation project as it produces compost and biogas from the organic waste stream, and thus reduces GHG emissions.

FINANCING STRUCTURE:

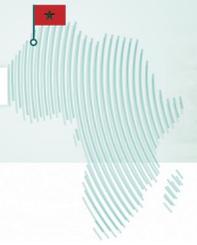
In 2014, following a call for tenders from the municipality of Meknès, SITA Atlas, a subsidiary of Suez Environnement won a 20-year contract to build and operate a waste disposal and recovery center. In this contract worth \$90 million, the company undertook to invest in carrying out the necessary works and managing the waste disposal and recovery center while the municipality had to pay a tipping fee of \$13 / ton of waste admitted (Suez Environnement 2014).

IMPACT OF THE PROJECT:

The project is located on an area of 52 ha and enabled to:

- Produce compost from green and organic waste;
- Produce biogas from organic waste;
- Treat leachate from the combustion of biogas;
- Irrigate the surrounding agricultural land from the treated leachate;
- Produce electricity and power for the ovens of neighbouring brick factories;
- Integrate the rag pickers who were active on the old landfill in the project through the creation of a waste sorting cooperative;
- Reduce the GHG emissions of waste from the city of Meknès.

Source : 4 C Maroc



6.3.6 Water and Irrigation

BOX 7: AGADIR MUTUALIZED DESALINATION PLANT (PPP)

This desalination project is considered as an adaptation project as it provides improved and climate resilient drinking water supply for the population in the area.

The project is run by *Office National de l'Electricité et de l'Eau Potable (ONEE)*, the Ministry of Agriculture, Sea Fisheries and Rural Development and the Ministry of Waters and Forests of Morocco. This project was initially created by combining two projects; one for drinking water and the other one for irrigation. The first one requires a 50% expansion of drinking water production capacity under the contract that Abengoa⁵ has been developing for ONEE, thereby increasing plant capacity to 150,000 m³/d of drinking water. The second project calls for the additional production of 125,000 m³/d of irrigation water, as well as the construction of the corresponding irrigation network for a total of 13,600 ha, promoted by the Ministry of Agriculture. Construction of the first phase started in July 2018. Works are still in progress with the anticipated commissioning date in 2020.

FINANCING STRUCTURE:

The project is being financed by investment fund InfraMaroc alongside a consortium of local banks, led by Banque Marocaine du Commerce Extérieur (BMCE).

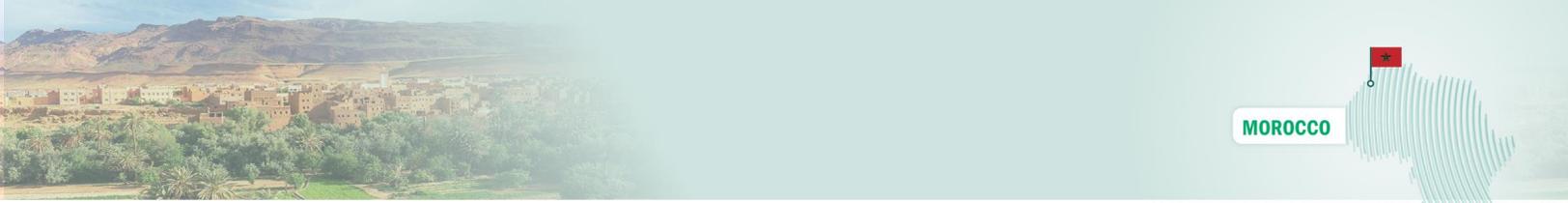
- PPP Model: Design-build-finance-operate-maintain (DBFOM)
- Contract value: \$346 million
- Operating Term: 30 years

IMPACT OF THE PROJECT:

The new plant will supply enough drinking water every day for 500,000 people – more than Agadir's population. Much of the water will be used for agricultural irrigation and tourism.

Source : ONEE, 2018

⁵ Abengoa is a Spanish, international company that develops technology solutions for sustainability in the infrastructure, energy and water sectors.



BOX 8: EL GUERDANE PROJECT⁶ : PPP IN IRRIGATION

The perimeter of Guerdane in the Province of Taroudant covers approximately 10,000 hectares and produces 50% of Morocco's citrus crops. For years, private wells pumping from the Souss underground aquifer were the only source of irrigation water for some 600 citrus farmers, but due to over-exploitation, the level of groundwater was decreasing by an average 2.5 meters a year. Citrus farming in the region became increasingly unsustainable. Between 1995 and 2002, the planted citrus fruit area decreased by 22% as farms were abandoned or put out of production. Morocco suffers from water scarcity as a result of climate change. The water sector is also underlined as a priority for adaptation measures in the First NDC given its high climate vulnerability. To alleviate the lack of water in the perimeter, the 1995 Watershed Management Plan of Souss-Massa allocated an average yearly volume of 45 million cubic meters of water originating from the Mohamed Mokhtar Soussi-Aoulouz dam, which is located about 40 miles away. The Government sought a private partner to construct both a 300-kilometer water irrigation network to transport the water, and a distribution system to deliver it to farmers based on the size of their citrus groves. The surface water allocated to the project met just half of the water needs of the citrus farms.

FINANCING STRUCTURE:

- Association of private investors for the co-funding, the construction, and the water service operation for 30 years.
- Cost of infrastructure: \$89 million.
- PPP: Government, users and the private operator.
- Transaction documents designed to minimize the service provider's risks:
 - Supply risk: shared among service provider, users and Government;
 - Demand risk: a water fee similar to the present groundwater cost;
 - Optimized subscription procedure: 80% of subscription before the project starts;
 - Limited risk of users' non-payment: a binomial fee⁷ will reduce the risk of users' non-payment.

⁶https://www.unece.org/fileadmin/DAM/ceci/documents/2014/water_and_sanitation_October/Morocco_the_Guerdane_irrigation_project.pdf

⁷ The binomial option pricing model uses an iterative procedure, allowing for the specification of nodes, or points in time, during the time span between the valuation date and the option's expiration date.



The Guerdane project is the first PPP irrigation project in the world. IFC – with the support of a technical assistance grant from France’s FASEP - provided the Government with advice on structuring and implementing the Guerdane PPP irrigation project to deliver a high-quality, accountable and financially and environmentally sustainable public service to end-users (IFC 2004, FASEP 2018).

IMPACTS OF THE PROJECT:

- Limit the exploitation of groundwater to 76 million m³.
- Reduced pumping costs by 50%.
- Generalization of drip irrigation on 10,000 ha.
- Increased production of citrus by 22%.
- Increased exports of citrus in the scope of 35%.
- Preservation of 11,000 jobs.
- Valuation of farmland.

Source: UNECE, 2014



6.3.7 Financial sector

BOX 9: BCP GREEN BOND

This is a mitigation initiative as it aims to finance green energy projects. But depending on the pipeline, it can also be categorized as an adaptation project, for example rural electrification or solar PV for water pumping, etc.

The Banque Centrale Populaire (BCP) has announced that it has obtained the preliminary approval from the Moroccan Capital Market Authority (AMMC) for the issue of a “Green Bond” of up to \$217 million over 10 years.

First green bond raised in foreign currency by a Moroccan bank: The "Green Bond" compliance certification was issued by the British company Green Investment Bank. The IFC, a subsidiary of the World Bank, supported the Moroccan bank in setting up this operation.

FINANCE STRUCTURE:

Issue of the Banque Centrale Populaire of a green bond up to 2 Billion Dirhams: Maturity of the issue over ten years. Depending on market demand, a second part of the operation [ceiling balance: DH 1 billion] could be denominated in the local currency (dirham) or in foreign currency.

IMPACT OF THE PROJECT:

The operation will facilitate the development of green finance on the Moroccan market by allowing the required regulatory and technical changes.

The projects identified will generate electricity production of more than 1,500 GWh per year from wind power, allowing nearly 1.8 million inhabitants to theoretically have access to a low-carbon source of electricity. These projects will also avoid the emission of more than 17 MtCO₂ over their lifetime.

Source: 4 C Maroc



7. PRIVATE SECTOR LANDSCAPE

7.1 Key players for climate action in Morocco

Morocco's economy was expected to grow by only about 3,7% in 2020 (as indicated in Table 1 above) - having slipped from about 4,2% in 2017 and currently the impact of Covid-19 is already being felt on the economy. Hence, the public sector needs support by the private sector and vice versa to stabilize and strengthen the local economy. The COVID-19 crisis has also exposed the vulnerabilities of the social systems and the fragility of economies. Increasing resilience needs to be one of the main guiding principles when rebuilding the Moroccan economy and society after the crisis. The country needs to be better prepared to withstand future pandemics but also the other major looming threat to humanity - climate change. The NDC expresses that climate targets can be met with additional international support but also, and very important, increased participation of the private sector.

To scale up private sector investment in climate actions, it is necessary to provide advisory services and adequate financial solutions to attract investment, support local businesses in order to create jobs and build an inclusive, green and resilient economy.

In Morocco, the private sector is composed of 93% micro, small and medium enterprises (MSMEs) and 7% of large companies (LEs). These MSMEs have limited access to funds and there is a need to incentivize financial institutions to develop new mechanisms to support them. The MSMEs generate up to 80% of employment, but often struggle to get the finance they need to expand their business, create more jobs, and contribute to the economy.

The breakdown by sector of activity shows that almost 44% of the workforce operates in the services sector, 34% in the agricultural sector and 22% in industry. (Société Générale, 2020).

To finance their investments, one in five companies uses external financing, the majority (93%) of which comes from bank credit. This proportion rises to 46% for LEs versus 18% for micro enterprises. The latter are the most confronted with issues of accessing finance, which constitute a severe obstacle for 40% of them (HCP, 2020).



The General Confederation of Enterprises of Morocco (CGEM) is the representative of the private sector in Morocco. CGEM has placed environmental issues amongst its priorities since the 1990s, as is clearly shown by the following actions:

- Participation in climate negotiations since 1994;
- Creation of a commission dedicated to environment and green economy in 1999;
- Launching of the Moroccan Center for Cleaner Production in 2000;
- Initiated / participated in the creation of initiatives such as coalitions in charge respectively of water and waste: COALMA and COVAD, and the Climate Change Competence Center 4C Morocco;
- Direct participation in both the COP7 in 2001 and COP22 in 2016 held in Marrakech;
- The launch of a Charter and a Label of Corporate Social Responsibility (CSR) in 2006;
- Creation of a partnership with the Mohammed VI Foundation for Environmental Protection, including the Qualit'Air Pact;
- Obtained the observer status within the BINGO category (Business and Industry Non- Governmental Organization) and participated with strong delegations at the last four COPs (22-25).

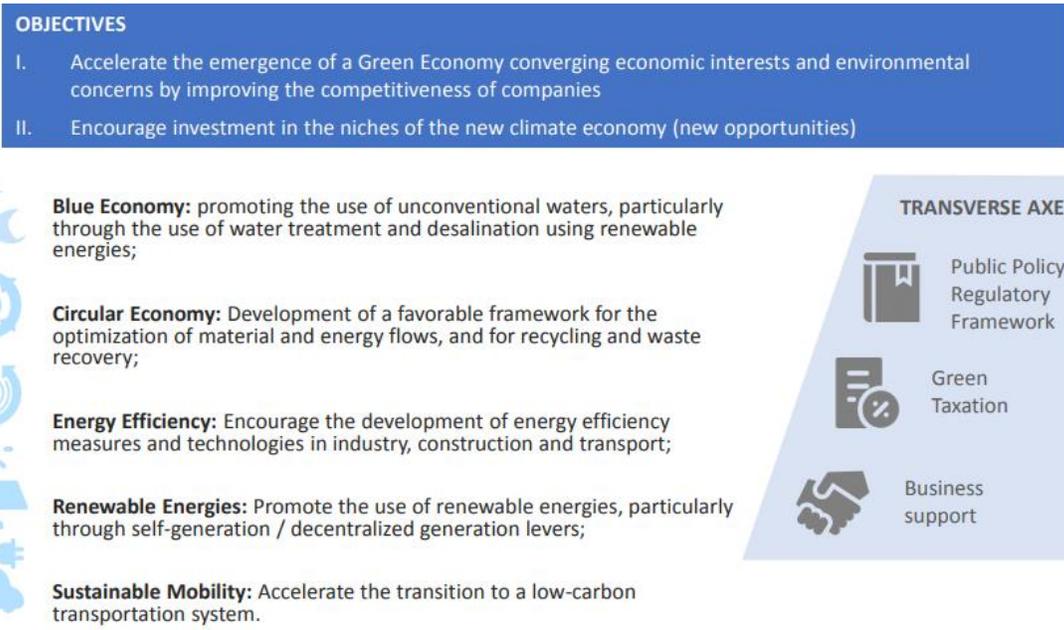
In 2018, CGEM felt the need to expand its climate action by providing the Moroccan private sector with a New Climate Economy Vision. It is a vision based on two actions to be carried out and supported in permanent synergy:

- Capacity building of private sector actors on climate change, its challenges, approaches, and opportunities; and
- The promotion of national companies' access to climate technologies / approaches, the development of corresponding markets, the improvement of the legislative and financial framework around these technologies and climate approaches.

In order to promote and supervise the implementation of this vision, CGEM has created the "New Climate Economy" Committee. Figure 4 below describes the objectives and strategic thematic areas for a Greener Economy and investment.



Figure 2: Objectives of the New Climate Economy Committee (CGEM 2018a)



The CGEM conducted a study on the Moroccan private sector challenges and opportunities linked to climate change as well as a guide to support private sector companies to understand climate change in terms of mitigation and adaptation measures. The study shows clearly the urgency and the need to support Moroccan businesses in developing projects that integrate measures to fight against climate change, both in mitigation and adaptation. This support will help them not only to overcome barriers, but above all take advantage of opportunities for innovative activities and access sources of funding. According to CGEM study, several opportunities are becoming clearer to companies if they get involved in climate change mitigation and adaptation projects: reduction of business costs, job creation, improvement of competitiveness, reduction of climate change impacts. In this sense, the CGEM supports private companies to prepare project proposals for climate finance and their involvement is fundamental for achieving the goals set by the country.



7.2 SWOT Analysis for green investment

The IMF ranks Morocco as Africa's sixth largest economy and the number one investment destination on the continent according to the Africa Investment Index 2018.

Morocco is classified 53rd in the “Doing Business” publication out of 190 countries and has only been improving for the last couple of years (World Bank 2020). This means that the enabling environment is improving.

The private sector is a driver for both negative and positive environmental change in developing countries. In Morocco, the focus of private sector involvement in combatting climate change has been mainly through mitigation measures where there is a clear business case and potential for returns, i.e. energy efficiency and renewable energy.

The private sector in Morocco faces big challenges in terms of competition and relative high production costs. Green investment is in the best interest of companies by reducing costs, diversifying business and investment opportunities. Reducing resource use is an opportunity to modernise operations, increase productivity and competitiveness. Moreover, the government together with the CGEM should develop a strong pipeline of green projects that are aligned with the country's NDC in order to mobilise the appropriate funding and also be tracked to ensure that the investments are meeting the targets set.

The Strengths, Weaknesses, Opportunities and Threats (SWOT) table below analyses the potential for private sector involvement in developing climate-friendly projects.



Table 7: SWOT Analysis for Morocco’s private sector NDC green investment

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • The Government acknowledges the role and importance of the private sector in implementing the NDC • The private sector association, CGEM, has established trainings and communication channels that can be used for climate change action implementation • The private sector has a relative understanding of the benefits of climate finance through existing financial vehicles (MorSEFF, GVC, Blue Line, Green Invest, etc.) • The private sector is represented in climate change dialogue and governance at national and international levels 	<ul style="list-style-type: none"> • Absence of tracking of private sector investment in climate change actions • Lack of national communication on Morocco’s green, private sector success stories • Lack of awareness to find suitable funding programs • Insufficient training in developing climate change bankable projects in the private sector • Insufficient understanding of adaptation measures as the business case is often not obvious.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Opportunity to leverage on existing climate change financial vehicles and products such as the scale up of various national sectoral financial green instruments such as MorSEFF, GVC, Blue Line, Green Invest • Existence of a diverse set of climate finance instruments • Increase in favourable, climate-related laws and regulations (e.g.: laws about ESCOs, energy audit requirements, Feed-in-Tariffs, etc.) • Provide more means to CGEM to expand the dialogue between public and private sector on climate change from the national to the subnational level • Provide more capacity to 4C Maroc to increase the number of trainings on climate finance, particularly associated to the development of private sector-led or PPP projects at national and subnational level 	<ul style="list-style-type: none"> • Perception that climate change actions are expensive for business interests • State subsidy for certain fossil fuels (e.g.: butane for water pumping in agriculture) • High transaction costs for climate-related projects linked to complex administrative-bureaucratic barriers and conditions when applying for a loan (particularly for MSMEs) • Absence of attractive interest rate from the banks and high collateral requirements when applying for a loan • COVID-19 economic impact



8. LANDSCAPE OF CLIMATE FINANCE IN MOROCCO

8.1 Role of the development partners

The level of concessional development assistance to Morocco is relatively low, reflecting its middle-income status. The largest donors are the African Development Bank (AfDB), the European Bank for Reconstruction and Development (EBRD), the European Investment Bank (EIB), the International Bank for Reconstruction and Development (IBRD), the German Development Bank (KfW), GIZ and the European Commission (EU) through the Neighbourhood Investment Facility (NIF), and the French Development Agency (AFD). External finance for climate change is provided both bilaterally and through multilateral global funding mechanisms, and is delivered as grants, loans, and technical assistance to private, public, and private-public projects. Donors are aligned with national priorities. Donor co-ordination takes place through government-led sectoral groups, for example the thematic group on environment and climate change led by UNICEF.

Morocco is part of the **NDC Partnership**⁸ and has developed an NDC Partnership Plan that serves as the basis for coordination of NDC implementation at country level. It is both a planning and monitoring tool, which provides a framework for the major NDC actors to work together towards common objectives that align with prioritized needs of the Government. This initiative complements the wider climate engagement of the country. The Partnership Plan therefore captures not only new/planned work of the NDC Partnership, but also the Implementing Partners' relevant projects/programs that are ongoing or in the pipeline with the intention to provide a holistic picture of the contribution of key players to the Government's objectives pertaining to NDC implementation support.

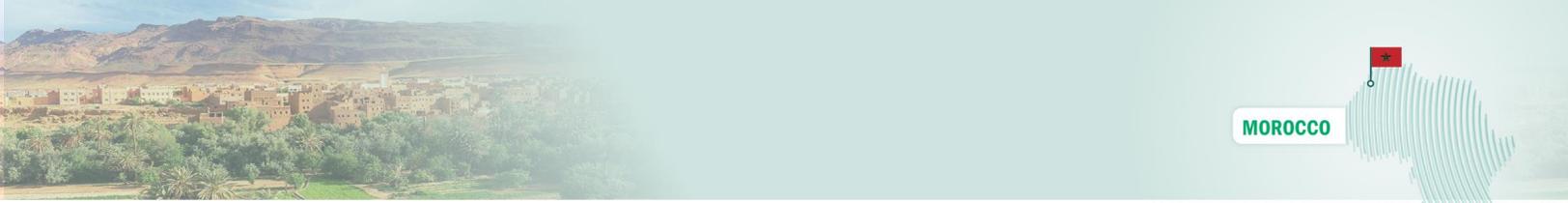
The World Bank's **NDC Support Facility**⁹ has helped the Moroccan Government understand the impacts of climate policies on different sectors of the economy, as well as worked to enhance technical capabilities and cross-sectoral coordination to implement Morocco's NDC.

The **NDC Support Cluster**¹⁰ established by the German Environment Ministry in the framework of its International Climate Initiative (IKI) has supported Morocco for the implementation of their nationally determined contributions (NDC). This initiative operates in full cooperation with the NDC Partnership and

⁸https://ndcpartnership.org/sites/all/themes/ndcp_v2/docs/country-engagement/countries/NCDP_Outlook_Morocco_v7a.pdf

⁹<https://www.worldbank.org/en/news/feature/2019/08/29/cross-sectoral-approaches-to-achieving-moroccos-climate-commitments>

¹⁰<https://www.ndc-cluster.net/>



in collaboration with the EU ClimaSouth project, as well as direct collaboration on the development of the Climate Change Competence Center (4C Maroc) on Adaptation and Mitigation.

The UNDP through its **NDC Support Programme**¹¹ is directly contributing to: (i) Strengthening the legal and institutional framework; and increasing ambition in two strategic sectors: transport and industry. The work contributes to UNDP's broader corporate initiative the "Climate Promise". Through the Climate Promise, Morocco will enhance institutional frameworks, incorporate new sectors and greenhouse gases (GHG), and assess investment opportunities.

As described above, there is a multitude of initiatives from development partners for NDC implementation and they are all coordinated under the NDC Partnership umbrella. The objective is to enhance the second version of the Morocco NDC. However, there is not a specific initiative that is focusing on private sector participation. Hence, this Study aims to contribute to that process in having an analysis to reinforce the involvement of private sector in NDC implementation.

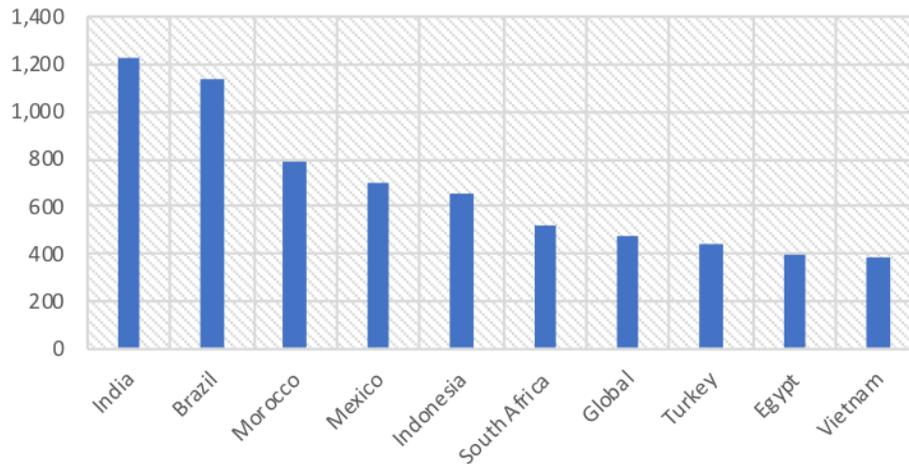
8.2 The volume of climate finance available in Morocco

Morocco has been able to attract significant amounts of climate finance thanks to its ambitious climate policies and its commitment to attract international investment for climate projects. Indeed, this commitment allowed the country to establish the credibility necessary to get this funding. The chart below shows the 10 most supported countries by international donor climate finance with Morocco occupying the third position after India and Brazil.

¹¹<https://www.NDC.undp.org/content/ndc-support-programme/en/home/our-work/geographic/arab-states/Morocco.html>



Figure 5: Amount of Climate Finance approved by countries (CFU, 2019)



The majority of climate finance allocated to Morocco has been in the form of concessional loans, with grants forming the remainder at \$25 million of the total approved (\$783.96 million) which is equivalent to 3% in climate funding during the period 2007 to 2017, but only 61.14% had been disbursed (Driss and Naima 2019).

Most of the funding comes from public funds dedicated to the fight against climate change, in the form of large concessional loans granted by the Clean Technology Fund (CTF). Various smaller grants were awarded by the Global Environment Facility (GEF), the Adaptation Fund (AF), the Green Climate Fund (GCF) and, finally, the Adaptation of Smallholder Agriculture Program (ASAP).

The data from the Climate Finance Update of September 2016 shows that the great majority (96%) of the climate finance that Morocco has received has been for mitigation projects and only 4% for adaptation ones.



8.3 Climate finance instruments

Table 8 below presents a non-exhaustive list of the various existing multilateral and bilateral sources eligible for private sector in Morocco. The fund size/pledge is indicative as this represents the global amount for public and private windows and it depends on the climate area and key sector specificities.

Multilateral development banks and international finance institutions (EBRD, AFD, BEI) have created national sectoral climate funds to address specific sectoral needs. These national climate sectoral instruments provide loans, guarantees and technical assistance. The funds are distributed via local Moroccan commercial banks such as BMCE, Credit Agricole etc., enabling SMEs to access funds. A list of funds is presented in table 9 in section 9.7 below as examples to be scaled up or replicated such as MorSeff Plus, the Blue Line, GVC, Imtiaz, Green Innov Invest.

Each of those funds has its active websites to explain the eligibility criteria and access process. These criteria and processes are all very complex and the most popular funds provide a training to understand the procedures (e.g. the GCF).

For the Green Climate Fund, you have two accredited entities which can provide support accessing the fund : (i) the Agency for Agricultural Development of Morocco (ADA) which is a national public entity based in Morocco, which provides action plans and value-added solutions to address agricultural needs at the local and national levels; and (ii) CDG Capital S.A. which is a national entity based in Morocco, with a project portfolio that is composed of a variety of sectors and financial instruments. It has provided financing through equity, loans and guarantees for both public and private sector projects in sectors such as power generation and distribution, port infrastructure, water supply infrastructure, real estate, rail, highways, telecommunications, services and industry.

In Morocco, the NDC Focal point from the MEME and the representative of CGEM and 4C Maroc can guide the private sector on the available sources for the country and how to access them.

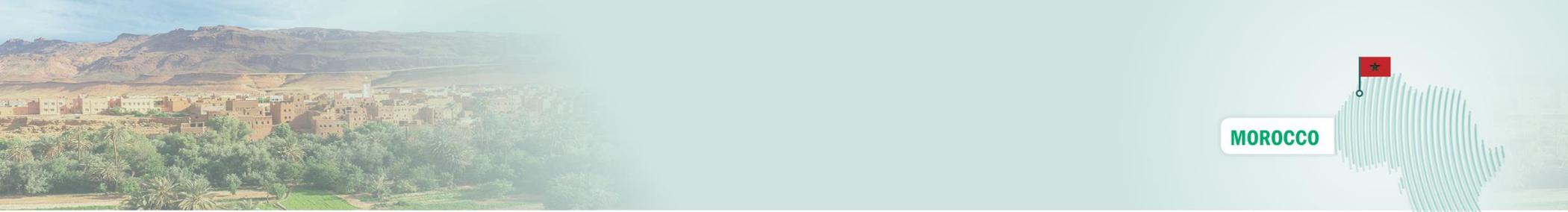
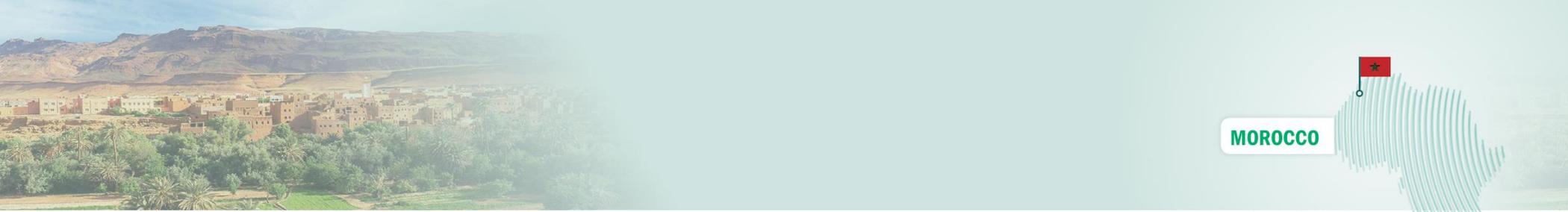


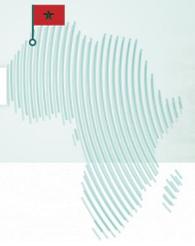
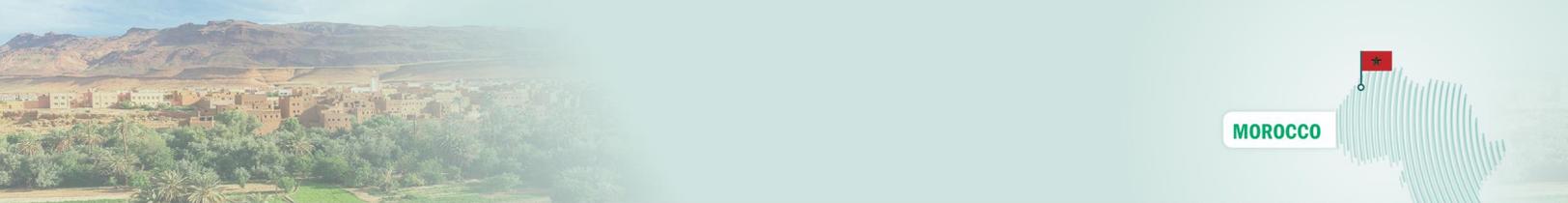
Table 8: Climate Funds eligible for Moroccan private sector

CLIMATE FUNDS ACCESSIBLE TO MOROCCO	CLIMATE AREA	PLEDGE (\$ MN)	KEY SECTORS
Green Climate Fund (GCF) / Private Sector Facility (PSF)	Cross-cutting	100 302	All
Clean Technology Fund (CTF) / Dedicated Private Sector Set Aside (DPSA)	Mitigation	5 462	Renewable energy transport
Global Environment Facility (GEF 4,5,6,7)	Cross-cutting	4 100	All
Adaptation Fund (AF)	Adaptation	755	All
Forest Carbon Partnership Facility - Readiness Fund (FCPF-RF)	Mitigation	430	Forestry
Africa Guarantee Fund	Cross-cutting	162	All
Adaptation for Smallholder Agriculture Programme (ASAP)	Adaptation	382	Agriculture
Global Energy Efficiency and Renewable Energy Fund (GEEREF)	Mitigation	282	Energy efficiency and renewable energy
International Climate Initiative (IKI)	Cross-cutting	3 600	Transport, biodiversity, energy
Nationally Appropriate Mitigation Action facility (NAMA Facility)	Mitigation	261	Climate change

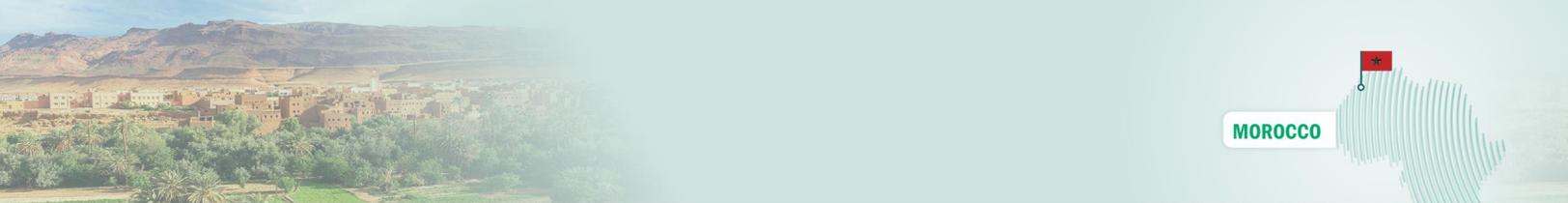


MOROCCO

Clean Development Mechanism (CDM)	Mitigation	2 000	CO2 emission reduction
EBRD Southern and Eastern Mediterranean Multi-Donor Account	Cross-cutting	10 000	Financial sector, agribusiness, renewable energy, energy efficiency
Neighbourhood Investment Facility (NIF)	Cross-cutting	2 300	Transport, energy, environmental sector
Africa Water Facility	Adaptation	162	Water
Infrastructure Consortium for Africa (ICA)	Cross-cutting	100	Water, transport, ICT, Energy, ICT
Sustainable Energy Fund for Africa (SEFA)	Cross-cutting	95	Renewable energy and energy efficiency
Fund for African Private sector Assistance (FAPA)	Cross-cutting	87	Private sector
Agriculture Fast Track Fund	Adaptation	23	Agriculture
Urban and Municipal Development Fund (UMDF)	Cross-cutting	8	Cities
TOTAL		130 511	



In view of the international situation of the carbon market, the Moroccan government plans to evaluate the implementation of a crediting mechanism for GHG emissions reductions in three target sectors (phosphate extraction, cement production and electricity generation) with potential links with the EU Emissions Trading Scheme. Though at its early stages, the Partnership for Market Readiness (PMR) is testing the carbon market approach with the establishment of a monitoring reporting and verification system to implement the sectoral crediting mechanism with a thorough data management system. This is laying down a mitigation methodology to enable carbon market. The government will be ready to advance in the process and, in particular, to design and operationalize the mechanism. Ultimately, businesses who subsequently reduce their emissions can sell their excess carbon credits to other participants whose emissions have increased, thereby commoditizing carbon and creating a market.



9. OPPORTUNITIES FOR GREEN INVESTMENTS BY THE PRIVATE SECTOR FOR NDC IMPLEMENTATION

Morocco is committed to achieve global goals for climate sustainability as it is expressed in its NDC. From the early stages of the process, it becomes very clear that NDC implementation will not succeed without the integration of national development strategies and planning and without the inclusion of private sector participation through green investments.

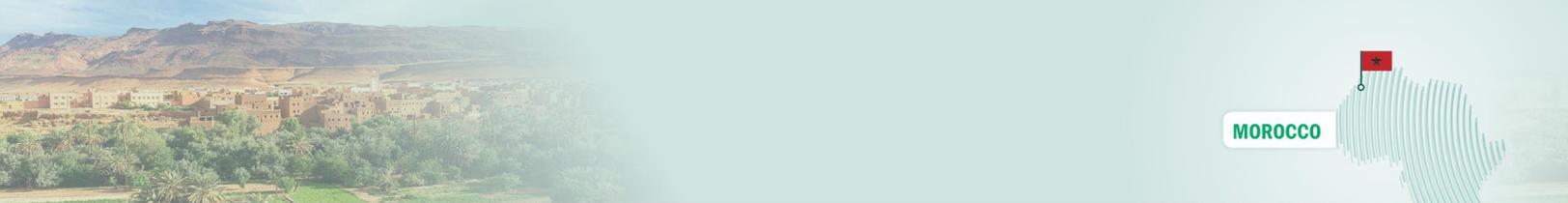
In terms of mitigation actions, in its 2016 NDC, Morocco provided a comprehensive list of 55 activities to achieve the conditional and unconditional GHG emission reduction targets by 2030¹². The listed activities span across all sectors for public and private actions (energy, agriculture, forest, transportation, waste, industry as well as actions in the residential and commercial sector) and are closely linked to the objectives of the different national strategies.

The following sections in this report analyse the relevant opportunities in the seven sectors requested for this study. Moreover, a detailed pipeline of potential green projects that require financing has been identified in Annex 2 (both for mitigation and adaptation).

9.1 Climate-smart agriculture sector

In the agriculture sector, the main opportunity for private sector investment can be drawn from the GEF funded UNDP program that is aimed to promote photovoltaic pumping systems for irrigation to substitute conventional energy sources. The objective is to develop financing mechanisms adapted to farmers by establishing lines of credit dedicated to solar pumping by Moroccan banks. International donors participate by subsidizing part of the cost of solar pumps, and guarantee lines of credit through Caisse Centrale de Garantie (CCG) or through other guarantee facilities. The estimated cost of the whole program is above \$2 billion and, once completed, the program will result in efficient and sustainable energy use with renewable energy technology power for the agricultural sector.

¹² The list of 55 activities can be found in the annex 1 of the NDC 2016.



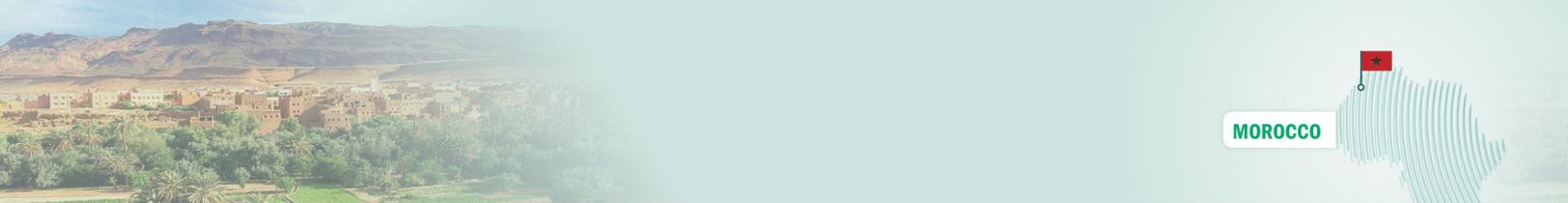
The collection of agricultural waste is also an opportunity to be developed. For instance, in Souss-Massa, the Regional Council, in collaboration with the agricultural cooperative COPAG¹³ and the company AGROTECH,¹⁴ has developed a project for the collection of agro waste that is estimated at \$55 million.

The OCP group¹⁵ is developing an integrated agricultural approach in the arid zones of the country to reinforce resilience to climate. The integrated agricultural approach is centered on the farmer, to better support and serve him or her, capitalizing on the agricultural lessons and developed expertise over the recent years. OCP has entitled this approach «Al Moutmir», this integrated initiative is based on 3 pillars: the scientific approach to ensure the sustainability of the offer; the partnership approach to develop solutions constructed with and for the ecosystem; and the farmer as a real change agent. Al Moutmir offers a multitude of innovative services and solutions focused on Soil Analysis from OCP's mobile laboratories and scientific support from the University, a training that covers the entire technical route of crops, demonstration platforms serving as support for explaining best agricultural and technological practices. There are opportunities arising with climate change and it is the moment to take advantage to create new products and services, develop new markets and develop new access to funding streams and finance mechanisms.

¹³ <http://www.copag.ma/>

¹⁴ <http://www.agrotec.ma/>

¹⁵ <https://www.ocpgroup.ma/about-us>



The Table below present investment opportunities in climate smart agriculture

Table 9: Climate Smart agriculture investment opportunities

INVESTMENT OPPORTUNITIES	PROJECT COST \$ MILLION	GEOGRAPHICAL LOCATION	STATUS
Low-emission management and treatment of agricultural waste in the Sous-Massa region	55	Souss Massa	SM Regional Council / COPAG / AGROTECH
Agriculture and Carbon Development in Drylands			
National program for solar irrigation pumps (AMEE)	360	national	UNDP and GEF financed a pilot project and a feasibility study with AMEE

9.2 Transport

In line with a global trend to increase private sector activity in infrastructure development, Morocco is now host to several major public-private partnership (PPP) projects, including the kingdom’s largest solar power plant station Noor I, Noor II, Noor III and ports at Jorf Lasfar and Tanger-Med, and few others presented in chapter 6.3 as examples to be replicated. A new PPP unit was created within the Ministry of Economy and Finance recently and is already in operation, cooperating closely with a number of international institutions such as the European Investment Bank (EIB) and the International Finance Corporation (IFC). PPP success has left the Government keen to boost the number of such projects, and privately financed public infrastructure initiatives in particular, in the process of expanding Government services and infrastructure without upfront investment. This interest in PPPs has gained traction under a new law to enhance clarity around the regulatory framework governing such contracts.

Morocco has implemented strategies and programs in adaptation measures to promote sustainable development and green investments: National Charter of Regional Development, National Port Strategy or Road Network Maintenance Plan 2016-2025. The Government has launched a subsidy program to



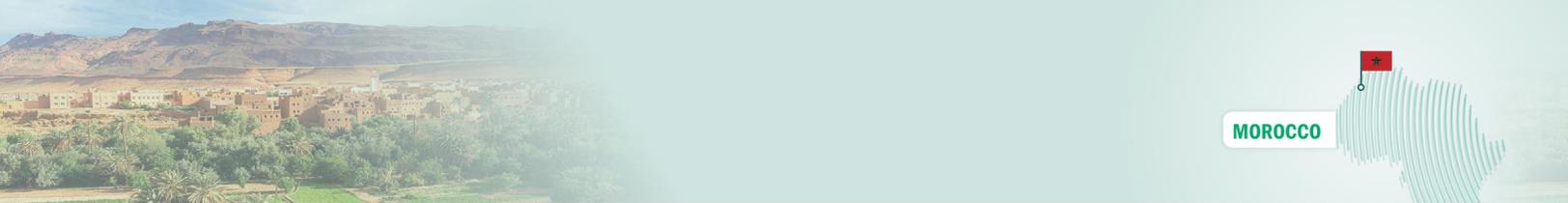
encourage the scrapping or renewal of old vehicles. It would be appropriate to improve the maintenance and technical control of freight vehicles and to promote the modal shift from road to rail. This would allow a reduction in logistics costs for the benefit of consumers and the competitiveness of economic operators, through optimized management of the flow of goods.

Road transport, people or freight, constitutes one of the main factors providing mobility of citizens and goods in urban and rural areas in Morocco. This mode of transport is responsible for the creation of approximately 500,000 jobs and grew by more than 6% annually since 2004 to become the third most energy-consuming sector in Morocco. However, the road transport fleet in Morocco is aging: nearly 40% of coaches and trucks are 15 years or older. This aging fleet has a negative impact on the environment and contributes to 23% of the total emissions of greenhouse gas (GHG) in the country. Responding to the challenge of the aging vehicle fleet, the government launched a subsidy program to encourage scrapping or renewal of old vehicles. However, this program achieved only limited results due to limited access to financing for some transport operators.

The table below summarizes the quantified opportunities in the transport sector.

Table 10: Transport Investment Opportunities

INVESTMENT OPPORTUNITIES	PROJECT COST \$ MILLION	GEOGRAPHICAL LOCATION	STATUS
Fund for urban road transportation	200	National	Not developed
Taxi Fleet Renewal Program (NDC, 2016)	650	National	Partially achieved
Rabat tramway Extension in (NDC, 2016)	157	Rabat	Partially achieved
Casablanca Tramway Extension (NDC, 2016)	1 600	Casablanca	Partially achieved
Renewal of utility vehicles over 20 years' old	3	National	Partially achieved



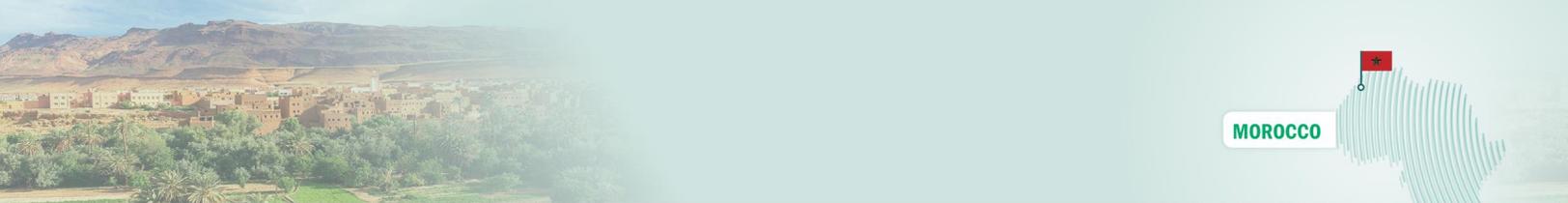
(NDC, 2016)			
Development of the Rapid Transit Bus (BRT) SDL Mobility	120	Agadir	Not started yet

9.3 Green Buildings and Smart Cities

Morocco aims to increase energy efficiency in buildings (residential, public, and tertiary). The country has implemented a regulation on the thermal building code. Morocco is benefiting from \$20 million from the NAMA Facility to set up financial incentives for the construction of new housing, the use of efficient equipment in order to motivate the investment of developers and consumers. This can be achieved by installing solar thermal collectors, refrigerators coupled with PV panels, and thermal insulation in line with the Moroccan Building Thermal Regulation. This program has not been implemented due to lack of adequate financial support and technical assistance. The investment needed to implement the building code is estimated at \$260 million for the first 5 years (Source: NAMA Habitat 4C Maroc). Morocco is threatened by water stress due to climate change and to the increase in population and living standards, the expansion of irrigated agriculture, and a growing tourism industry. In this sense, in recent years, luxury and golf tourism in Morocco have increased substantially with the associated development of hotels in the region of Marrakech and Agadir. Due to the hot climate, water consumption in hotels can be up to 550 litres per day per tourist. The hotel subsector is of significant and growing importance to the Moroccan economy, and hotels represent a significant demand for both water and cooling. Therefore, it is a sector which has good potential to deliver savings and improve the country's climate resilience. However, investments in projects to save water are scarce due to lack of regulations on water consumption and clarity on return on investments for such projects. Financial support with technical assistance is needed to encourage projects on water efficiency for buildings. A dedicated line of credit could be offered to the hotels to reduce their water consumption. Projects that reduce water consumption may include investment in cooling towers, chilled or condensed water pumps, or mini-desalination plants.

A low-carbon model city focused on efficient actions in energy, transport and waste management as in the city of Ben Guerir can be established. The investment opportunity is estimated at \$165 million as listed in the NDC.

Another opportunity is the implementation of a public lighting energy efficiency program in large Moroccan cities, which was identified in the NDC and aims to encourage application of energy efficient practices among public lighting services in Morocco. The investment opportunity for this program amounts to at least \$310 million (NDC, 2016). However, public lighting projects need the implication of the public sector (city,

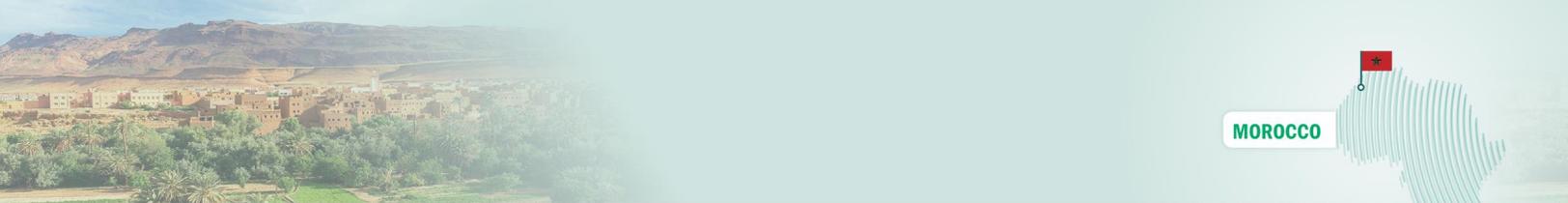


locality, or a region) with lengthy administrative procedures and tendering process to structure it as a PPP (SDL).

The table below presents opportunities in for green buildings and smart cities.

Table 11: Green Building and Smart Cities Investment Opportunities

INVESTMENT OPPORTUNITIES	COST IN US\$ MILLION	GEOGRAPHICAL LOCALISATION	STATUS
Energy Efficiency for residential buildings (Omrane Group with the Nama Facility)	260	national	Financial incentives from the NAMA facility of \$20 million.
Energy Efficiency for the tourism sector	86	national	Partially developed in the hotel industry with MorSeFF financing.
Energy Efficiency for the industries	200	national	The Parliament voted to do energy audits. This will provide more details on the opportunities.
A program for energy efficient ovens. The plan is to have 8 000 ovens / year	3	national	Some pilot projects were financed by the GEF and demonstrated the business model. This can be replicated by the private sector.
Development of solar water-heaters	945	national	PROMASOL, UNDP and GEF financed pilot projects that demonstrated the feasibility to involve the private sector. IRESEN and Sol R Shemsy manufactured the first Moroccan solar water-heater.

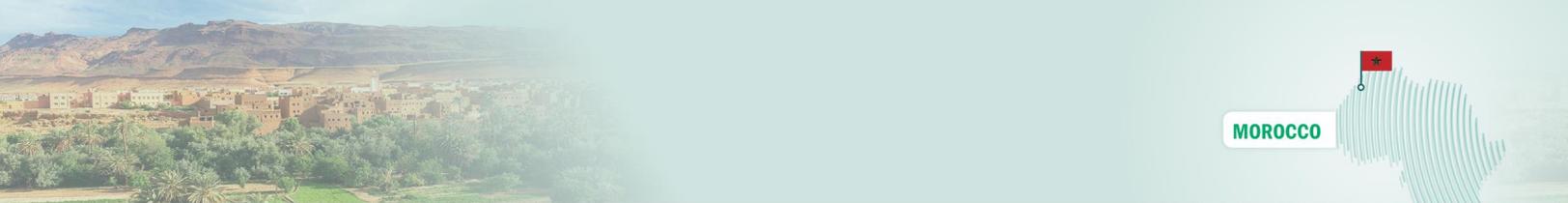


Program of efficient lighting for the residential sector	18	national	Information not publicly available
Program of energy efficient public lighting in cities	310	Fez, Agadir, Kénitra, Oujda, Meknes, Rabat, Martil	SDL for the public lighting in cities and municipalities
A low-carbon model city focused on efficient actions in energy, transport and waste management	165	Various cities	Refer to the NDC. Replication of Ben Guérir

9.4 Renewable Energy

Morocco is highly dependent on energy imports, with over 91% of its energy needs imported. Morocco has made significant commitments to renewable energy (RE) investment (Abdeljabbar et al. 2017) to counter the energy vulnerability, which, besides this very large dependency on imports, is caused by the growth of the population and the increasing needs for irrigation in agriculture. The country is currently recognised as a regional leader in the development of RE and considers the acceleration of renewables, coupled with public support, private sector investment and the necessary supporting infrastructure (e.g. grid improvements to compensate for an increased share of RE in the energy mix) as a key to the success of not only the National Energy Strategy but also the implementation of its NDC. Chapter 6.3 above described some flagship renewable energy projects. However, there are further opportunities for national projects such as:

- The implementation of a program to promote photovoltaic panels connected to the low-voltage grid with a target of 1,000 MWc by 2030: This program was identified in the NDC but was not implemented due to lack of a grid injection law (feed in tariff and net metering). However, with the declining price of solar power installations, many households in Morocco are opting for off-grid installations (solar PV and storage batteries). The UNDP and UNEP conducted the feasibility study and estimated the cost to implement the program at \$1 155 million (Source: NAMA Rooftop Solar PV).
- The use of liquefied petroleum gas (LPG) to increase its share in the industrial sector as a substitute for fuel oil, and to improve energy efficiency and local environmental quality: The natural gas sector

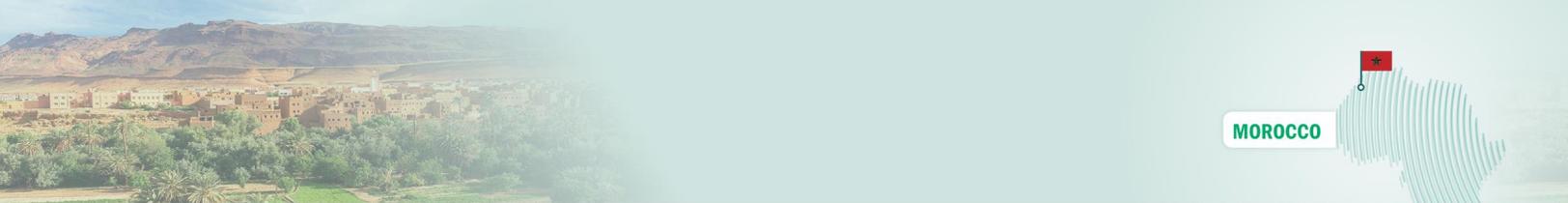


has experienced a historic turning point in Morocco with the launch, in December 2014, of the roadmap for the implementation of the National Plan for the Development of the Use of Natural Gas, the main component of which is LPG. Thus, a progressive approach was adopted for the realization of this plan in two phases. The first, entitled *Gas To Power*, concerns the construction of gas for electricity infrastructures. As for the second phase, called *Gas To Industry*, it consists in extending the use of natural gas to the industrial sector. Feasibility studies were undertaken by the Ministry of Energy (with the support from USTDA) for the possible construction of an LNG terminal and a pipeline transmission line connecting the terminal to the Maghreb-Europe Gas Pipeline (GME), in favour of combined cycle power plants. The investment opportunity concerns the LNG terminal, LNG storage, regasification and the land to ship interface. The investment concerns also the onshore distribution pipelines. Morocco has also developed the Law 13.09 on the development of renewable energy allows companies to self-produce their energy up to 50 MW and gives them the possibility to sell the surplus to the ONEE. In addition, private renewable energy producers are now free to sell their electricity directly to consumers.

The table below presents opportunities for the renewable energy sector.

Table 12: Renewable Energy Investment Opportunities

INVESTMENT OPPORTUNITIES	COST IN \$ MILLION	GEOGRAPHICAL	STATUS
Installation of grid connected solar PV panels (1 000 MW)	1155	National	UNEP and NAMA Facility has conducted a feasibility study
Machraa El Ain solar PV park project	120	Taroudan	COPAG is the project initiator
Solar IPP of Marrakech	150	Marrakech	Novare energy is the project initiator



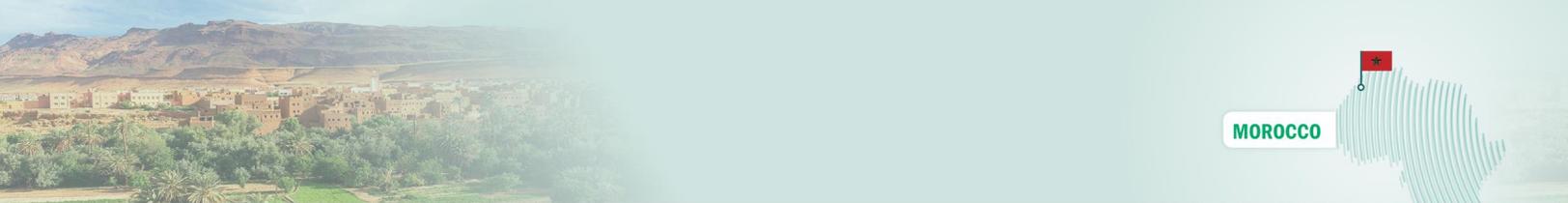
9.5 Waste Management

The Moroccan waste management sector mostly depends on the informal sector for the collection, sorting, and recycling of waste. The activities are low-tech, fragmented, and do not meet minimal health, safety, environmental, labour, or fiscal requirements.

The government's current policy and the predominant share of investment in waste management are focused on the upstream and midstream subsectors in order to improve the waste collection rate, service, and infrastructure; fewer resources are allocated to waste segregation, recycling, and landfill reclamation. Although legislative and regulatory frameworks have been adopted (e.g. law 28.00 relative to waste management and reduction), they frequently suffer from lack of public funding and effective implementation. Thus, private sector investment is seen as essential for catalyzing transformational change and for developing waste management practices that encompass social, environmental, and economic benefits. However, many barriers hinder private sector investment in waste management in Morocco:

- Inefficient, informal waste recycling activities hinder efforts to modernize the waste management value chain;
- Lack of a clear business model defining the required scale of the waste valorisation platforms to be developed;
- Lack of good practice examples for waste management in Morocco, in particular in the private sector;
- Lack of formally developed commercialization channels for recovered end products;
- Technology limitations: some advanced treatment and valorisation technologies (in particular waste-to-energy) have not yet been widely diffused in Morocco;
- Absence of financial incentives to invest in waste valorisation projects.

All these challenges present an opportunity for the private sector to invest in the modernisation of the waste management value chain. Moreover, the Moroccan government is determined to improve the situation, and has launched a 15-year Waste Program with the objectives of having all the municipal solid waste (MSW) collected and disposed of in sanitary landfills, and having a MSW recycling rate of at least 20% by 2022. Another objective of the program is to create at least 70,000 jobs in the waste management sector. The



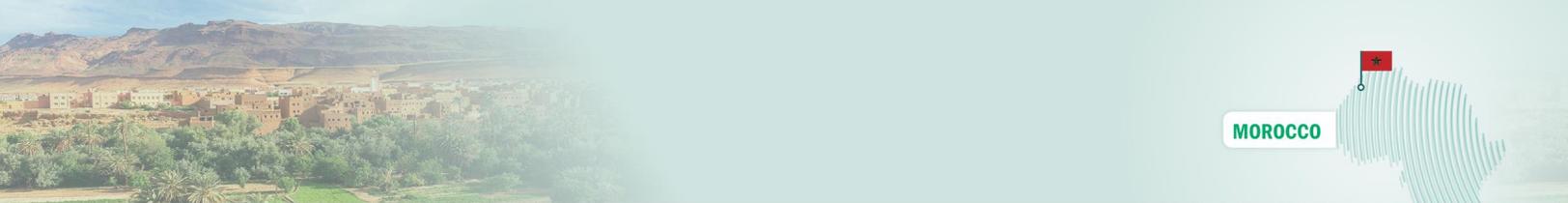
private sector is a key actor in achieving this. The launch of the Multimodal Platform project¹⁶ is designed as a business model that includes a partnership between the private and public sector. This project assists the Moroccan government in achieving the objectives of its Waste Program by providing the technological know-how to municipalities and increasing the involvement of the private sector. The project is also helping the government to reach its objective of job creation by integrating the informal waste collecting activities into a well-structured and organised sector.

The table below presents opportunities to invest in waste management.

Table 13: Waste Management investment opportunities

INVESTMENT OPPORTUNITIES	COST (\$ MILLION)	GEOGRAPHIC LOCATION	STATUS
<p>Mechanical biological treatment and co-incineration of household waste.</p> <p>Recycling household waste through co-incineration, mechanical biological treatment. This process involves the following manipulations: mechanical sorting and crushing, biological treatment with aerobic drying.</p>	1 440	National	Partially achieved by Exochems, an environment company.
<p>100% recycling and collection of household waste - "Zero Dumps"</p>	108	Various cities	Ardi Maroc is the developer and this project is seeking financing.

¹⁶ Multimodal Waste Platforms: <http://www.admireproject.org/Projects/Multimodal-Waste-Platforms-Morocco>



Produce energy through waste compost using pyrolysis	45	Agadir	SDL waste is the company developing this project and it requires financing.
Collection and valorisation of agricultural waste	55	Souss-Massa	The consortium has developed the project SM Regional Council / COPAG / AGROTECH and is seeking financing.

9.6 Financial sector

Diversifying financial products such as through 'green' insurance can pave the way for better private sector investment and provide new opportunities for the Moroccan financial sector. There is an example of multi-risk climatic insurance in Morocco, the agricultural mutual insurance company (MAMDA). The insurance covers cereals, vegetables as well as aquaculture, throughout the national territory, against drought, hail, frost, excess water, strong winds, the sand wind and the mortality of aquaculture livestock following pathological weather events.

Moreover, the Moroccan banking sector is in general reluctant to take risks with SMEs, and particularly with road transport operators, in the agricultural sector, with small industries and in rural areas. Moroccan banks, in general, prefer that multilateral financial institutions share the credit risk when financing small to medium borrowers. This presents an opportunity to set up a financing scheme that includes loans and guarantees to the SMEs in various NDC priority sectors.

Financial instruments can be replicated to address the priority areas in the NDC. A further detailed study is required to understand the specific financial requirements associated to each sector for NDC implementation.

The following table present example of successful national sectoral instruments in several sectors that support green investment.



Table 14: National climate sectoral financial instruments available

ORGANIZATION (DONOR)	PROGRAM	TYPE OF SUPPORT	FOCUS
BMCE Banque et Banque Populaire (EBRD, AFD, BEI, KFW)	Morseff /GEFF ¹⁷	Loans / Technical assistance/ Subsidies	Energy efficiency and renewable energy
BMCE (AFD/BEI)	Blue line ¹⁸	Concessional loans / Technical assistance	Water treatment and reuse
Société Générale du Maroc Dar Ad-Damane	Force ¹⁹ At-Tahfiz	Guarantees	SMEs in general
CCG (Ministry of Finance)	Damane Express ²⁰ Damane Créa Damane Dév	Guarantees	SMEs in general
Maroc PME (Ministry of Industry)	IMTIAZ Croissance ²¹	Subsidies	SMEs in general in industry
CCG (World Bank)	Green Innov invest ²²	Loans / Co-financing	SMEs / Sustainable Development / innovation
Maroc PME (Ministry of Industry)	Technical Assistance / Investment Program ²³	Technical assistance	Covid-19 recovery / energy efficiency

¹⁷ Morocco Sustainable Energy financing Facility: <http://www.morseff.com/>

¹⁸ Ligne Bleue: "<https://www.eib.org/en/projects/pipelines/all/20160852>"

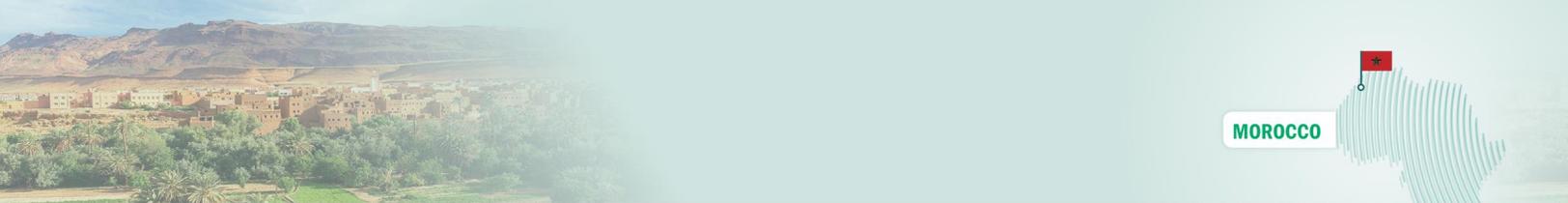
¹⁹ Guarantee for SMEs: <https://www.sgmaroc.com/produit/force-de-dar-adamane/>

²⁰ Guarantees for SMEs : <http://www.ccg.ma/fr/garantie>

²¹ Incentives for SMEs in industries: <http://candidature.marocpme.ma/imtiaz-croissance/>

²² Green Innov Invest : <http://www.ccg.ma/innovation/actua-ammc.php>

²³ Technical Assistance to improve competition through various services and energy audit : <http://196.61.239.7/wps/portal/portal-anpme/>

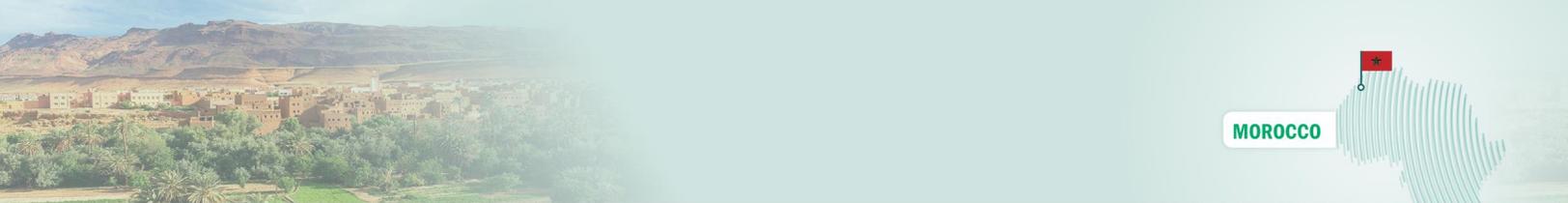


			audit/Technology for (M)SMEs
AMEE (Ministry of Energy)	Energy Efficiency in Industry Program (PEEI) ²⁴	Technical assistance	Energy efficiency
Crédit du Maroc (EBRD, GCF, EU)	Green Value Chain ²⁵	Loan/Technical Assistance	Energy Efficiency for regional value chains
BMCE (AFD, EIB)	Cap Valoris Cap énergie Cap Bleu ²⁶	Loan/ Technical Assistance	Waste valorization, energy, water
Crédit Agricole du Maroc (AFD)	AGREENFI Energy Efficiency facility	Loan/Technical Assistance	Energy efficiency in Agribusiness sector

²⁴ Programme d'efficacité énergétique dans l'industrie (PEEI) : https://www.amee.ma/index.php?option=com_content&view=article&id=267:programme-defficacite-energetique-dans-lindustrie-peeii&catid=77:efficacite-energetique-en-industrie&Itemid=201&lang=fr

²⁵ Green Value Chain

²⁶ <https://www.bankofafrica.ma/fr/bmce-bank-africa-lance-la-1ere-ligne-de-financement-marocaine-destinee-a-la-gestion-des-ressources-en-eau>



10. CHALLENGES FOR GREEN INVESTMENTS FROM THE PRIVATE SECTOR TO IMPLEMENT THE NDC

10.1 Policy and regulatory gaps

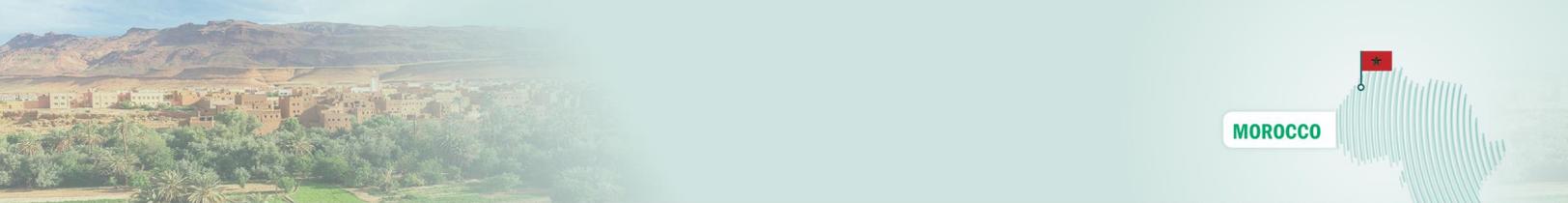
Policy frameworks play a critical role in mobilising investment in green sectors such as renewable energy or energy efficiency, and incentivizing mitigation of the environmental impacts of investment projects.

For small-scale/domestic renewable energy investment in Morocco, there is yet no remuneration policy framework for solar energy use, to help projects struggling with upfront cost, especially with international oil prices reaching record lows. Moreover, the domestic players currently face competition from implicitly subsidized coal and gas power generation. An incentive policy would encourage switching to cleaner and renewable energy sources thus reducing import-dependency of energy consumption and reducing the fiscal burden of remaining energy subsidies. There are gaps in providing financial incentives, particularly through guarantees, regulated tariffs or tax breaks, etc.

Other policy and regulatory obstacles that are slowing down the development of NDC-related private sector projects in Morocco are the non-application of some regulations like the water law 36-15, which constitutes a legal obligation encouraging industries to invest in wastewater treatment, or the Thermal Construction Regulation in Morocco (RTCM), which sets the minimum requirements that must be met in terms of energy management by buildings for new residential and tertiary use. In fact, the lack of capacity either of the Government to control the application of certain laws (e.g. water law 36-15), or of companies to finance the measures relating to these laws (e.g. RTCM), delays their application and implementation.

There is no national tracking system on green private sector investment. This would support the implementation of the NDC by helping the government to assess the gap in its sectoral policies to attract private sector investment for green projects as well as provide a national portfolio of examples of successful projects (for example, as presented in chapter 6). This would support the government in having data to analyse the private sector contribution in fighting against climate change and be able to project various scenarios to ensure that they are meeting their NDC targets.

The Moroccan NDC doesn't include concrete and measurable actions and goals for adaptation to climate change. There is no roadmap on how to reach adaptation goals. On the other hand, the National Adaptation Plan is currently being developed aligned with the country's National Strategy for Sustainable Development and the goals of the NDC. The challenge is to bridge the gap between the national and the subnational level of understanding concerning climate change adaptation measures. This is important for adaptation, as the understanding of the needs has often strong local specificities and therefore measures/ policies need to be adapted accordingly. Moreover, this is also important for municipal or subnational governments so



that they can therefore better engage adaptation-related private finance. GIZ has started to gather data on adaptation in three regions: Marrakech-Safi, Béni Mellal Khénifra and Sous-Massa, which will be able to inform regional climate change plans (IIED, 2019).

The COVID-19 crisis has led to a massive financial emergency and stimulus package for pandemic recovery efforts. The economic stimulus measures should be designed and implemented along the lines of the 'Build Back Better' principles, to support the transformation to a low carbon and climate resilient economy by requiring green growth conditions.²⁷

10.2 Finance resources

In terms of tax incentives, the National Sustainable Development Strategy (SNDD) has a target of substantial environmental fiscal commitments, but the current fiscal policy on environmental taxes remains unclear. Even though some eco taxes are in place they have a very narrowly defined scope - for instance in the waste and plastic sectors - with no specific overall strategy (Green Economy Tracker²⁸, 2019).

Most of the available economic instruments (e.g. low taxes, subsidies and other incentives) dedicated to green projects in Morocco concern mitigation measures. The reasons are that mitigation measures such as energy efficiency, can easily demonstrate their profitability through cost reductions. In contrast, less interest is given to adaptation measures, as most efforts to improve climate resilience take the form of risk avoidance and only generate a return if and when an extreme event occurs. This lack of clarity in terms of costs and benefits combined with lack of knowledge and risk assessment in companies constitutes an obstacle for the development of financial instruments dedicated to adaptation measures. Morocco should focus on providing more support to climate change adaptation since its economy relies heavily on sectors that are vulnerable to climate change, such as tourism, agriculture, and fisheries.

The table below shows two examples of Moroccan companies' vulnerable to climate change.

²⁷ For example: <https://www.weforum.org/agenda/2020/04/how-to-build-back-better-after-covid-19/>

²⁸ <https://greeneconomytracker.org/country/morocco>



Table 10: EXAMPLES OF VULNERABILITY OF MOROCCAN COMPANIES TO CLIMATE CHANGE (GIZ,2016)

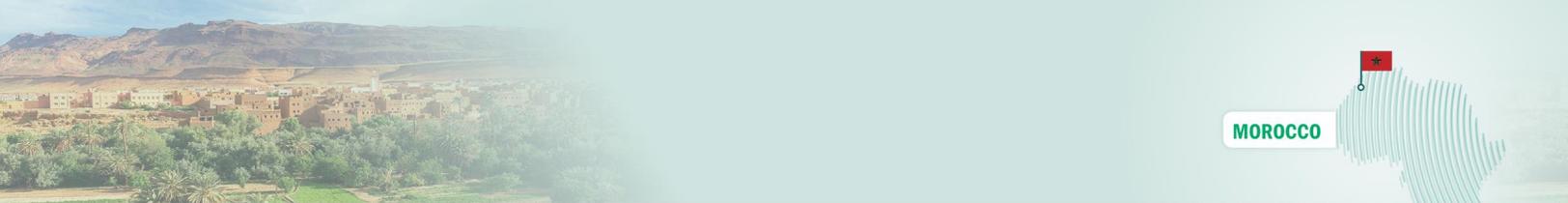
AGRUMAR SOUSS: Cooperative for the conditioning and export of citrus fruits located in the Industrial Zone of Ait Melloul (ZIAM).

Considering the geographical location of Agrumar Souss and the vulnerability of the citrus sector, the company is highly exposed to Climate Change. The increase in temperatures, heavy rains, heat waves, the general decrease in precipitation, the more frequent occurrence of severe droughts and a strong Chergui wind, as well as, late frosts are all climatic phenomena influencing negatively the activity of the company. Agrumar Souss was confronted with fruit growth in smaller quantities and damaged fruits because of the sensitivity of citrus fruits to heat waves and water stress. During the heat waves from May to June 2012, the company experienced a 40% to 50% drop in production linked to premature citrus fruit drops in the Souss Massa region. During the heavy rains of November 2014, the company lost a significant part of its packaging stocks following the flooding of its warehouses and significant damage was recorded on the clementine fruits in production orchards.

AVEIRO: Fish processing company based in Agadir in the semi-arid region of Souss Massa.

It produces around 600,000 cans every day. Aveiro is exposed to the same climate change risks mentioned above. The company has already suffered from flooding in its premises and warehouses, delays and product damage in its supply chain, due to impassable transport routes and a 5% reduction in employee productivity during heat waves. Fish processing is a water intensive production process. The growing scarcity of water resources in the Souss Massa region is jeopardizing business operations, especially as water prices are expected to rise in this region. Climate Change threatens the core of long-term business activities due to increasing ocean acidification, rising sea temperatures, acceleration of migration and decline of specific fish stocks, for example sardines, which represent more than half of the company's production.

As indicated in the sections above, only 4% of climate finance in Morocco has been dedicated to adaptation and a full 96% to mitigation. Even though there are a few financial instruments with a focus on adaptation (as indicated above in table 9), many companies are not aware of these favourable support mechanisms because of the lack of a centralized platform that can provide information, procedures and a support system relating to adaptation.



10.3 Climate change knowledge

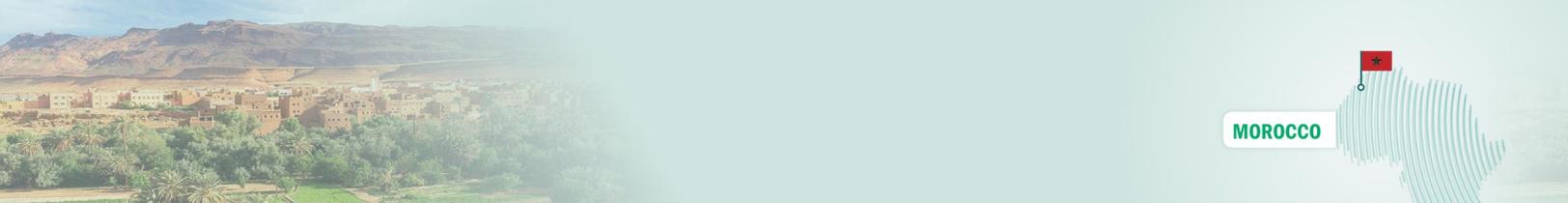
Businesses developing a climate-related project often lack the technical knowledge (lack of capable human resources with the requisite skills) to design bankable projects that attract private finance. There is a misconception about the impact of climate change on businesses, since it is often perceived as high upfront cost without any return on investment.

Adopting new business processes, developing new products or services, and implementing new technologies for increased low carbon performance and climate resilience often require technical skills and expertise that might require relatively high upfront human and capital investment. However, in the long run, addressing climate change issues is more sustainable and costs less. The demonstration of management practices and examples of successful projects are key to further develop green and sustainable projects.

While opportunities for mitigation to climate change are clear, adaptation projects are not well understood because the economic value and business models of such projects are not obvious. Large companies often have the means and knowledge to access this technical expertise in supporting them to access climate finance, but SMEs are less likely to be able to do so given tight margins in the context of their business.

According to a CGEM study, the private sector perceives it difficult to find information on existing climate related financial instruments adapted to their business focus. They require awareness raising and training on the existing financing instruments at companies level.

Most importantly, as mentioned above the current lack of reporting on private sector activities in climate change projects and a harmonised standard tracking system make it difficult to estimate the current state of private sector participation, and therefore further complicates any effort of scaling up private-investment in climate-related activities.

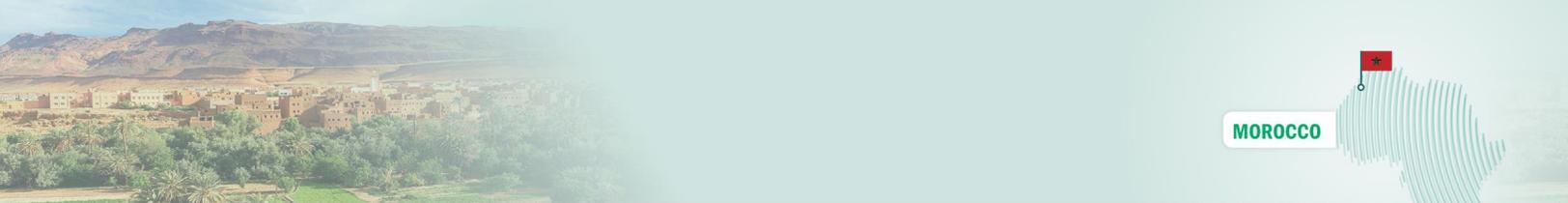


11. CONCLUSION AND RECOMMENDATIONS

The engagement of the private sector is critical in the process to achieve the NDC targets. Compared to other African countries, Morocco has demonstrated strong leadership in the fight against climate change under the Paris Agreement, and it has done so with a notable involvement of its private sector. In this sense, a number of factors described in the report have been driving this path:

- **The government's low-carbon strategy.** Morocco decided to launch its energy transition as early as 2009. The energy sector accounts for two thirds of the country's CO₂ emissions and fossil fuels are almost entirely imported. Today, renewable energy installed capacity amounts to more than 3,500 MW, reducing the country's dependence on fossil fuels. After the Paris Agreement, Morocco immediately integrated the targets of its NDC into a comprehensive low-carbon strategy ²⁹that included the private sector as a key player in its implementation.
- **The legislation and regulatory reforms that increased transparency in investments and accelerated renewable energy technology deployment as well as energy efficiency measures in the public building sector.** For example, Law 13.09 on the development of renewable energy allows companies to self-produce their energy up to 50 MW and gives them the possibility to sell the surplus to the ONEE. In addition, private renewable energy producers are now free to sell their electricity directly to consumers.
- **The creation of low-carbon business and income generation opportunities as described in section 6.3.** Morocco's NDC, calls for scale up for development of new low-carbon and resilient solutions. It thus presents an opportunity for companies to diversify their products and services, while also creating local value and jobs for the community. Engaging in the implementation of the NDC can be a business opportunity for the companies involved.
- **The mobilization of the private sector actors.** Morocco's work on increasing companies' awareness and capacity on climate issues started more than 20 years ago through the CGEM, which has a dedicated commission for environmental and climate issues. The CGEM goal is to obtain buy-in and secure business actions that contribute to the achievement of the Kingdom's low-carbon objective. This engagement was further boosted by Morocco's organization of the Conference of the Parties (COP 22) in 2016, which facilitated strong mobilization of the private sector around the Paris Agreement (UNDP, 2019).

²⁹ *Stratégie pour un développement à faibles émissions (LEDS)*



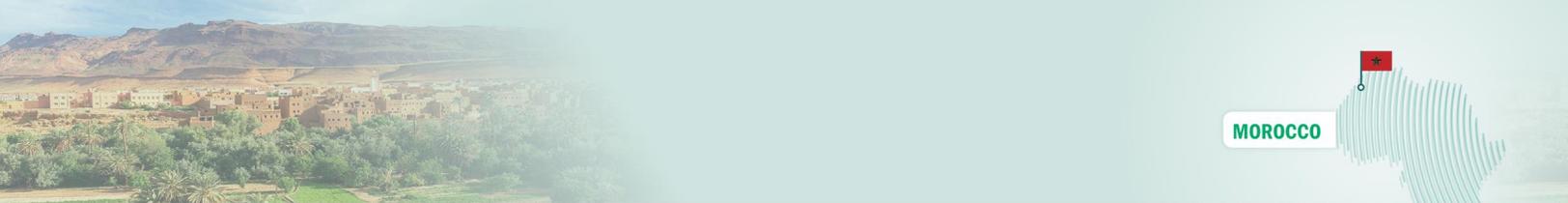
Morocco's private sector strategy provides inspiration for many other countries, as there are many opportunities for business players to be involved in green financing and therefore advance the implementation of the NDC. However, to be able to achieve the NDC goals, there are still specific challenges that need to be resolved. A greater attention was given to mitigation rather than adaptation which is as important and needed for Morocco's development, with an economy - mainly agriculture and tourism - heavily dependent on its ecosystem services. Thus, it is important to flesh out better the business case for adaptation private finance, and the enabling environment plays a key role here.

Recent studies show that the private sector still requires more awareness and understanding of the challenges and risks to turn them into opportunities linked to climate change. This year, the NDC is currently being revised for COP26 with more ambitious goals. Thus, the role of private finance for green investment is becoming even more important. The approach to private sector engagement needs to be centred on a good understanding of demand from the private sector to receive support from the government and development co-operation. This approach should target the major barriers companies face in pursuing green growth in Morocco.

In order to scale up or replicate successful projects, it is important to promote integrated approaches - i.e. support towards policies and regulations to skew private sector involvement towards climate change, as well as develop tools and instruments to leverage green private investment. The recommendations below outline some of the major actions to reinforce NDC implementation through private sector green investment.

1. INCREASE AWARENESS AND CAPACITY BUILDING THROUGH TRAININGS

- Set up a monitoring and tracking system of all green private finance projects taking place in the country so as to be able to showcase best practices in training programs.
- Create a one-stop-shop on the use of climate-related information, tools and access to climate funding for the private sector. CGEM should be a knowledge hub of the private sector on the various national sectoral financial instruments and international funds. 4C Maroc currently offers trainings to better understand the international climate finance landscape, such as GCF, GEF, CIF, etc. However, the trainings and information should be disseminated at the sub-national level.
- Sensitize the development partners to 'speak the language' of the private sector i.e. focus on the economic benefits of improving environmental performance, such as increased competitiveness, reduced costs and exposure to risks, rather than just focusing on environmental benefits.
- Develop and carry out trainings to support companies, particularly SMEs, to formulate funding proposals for mitigation and adaptation projects. In general, climate adaptation measures are less well understood than mitigation ones (with the calculation of Greenhouse gas emissions).



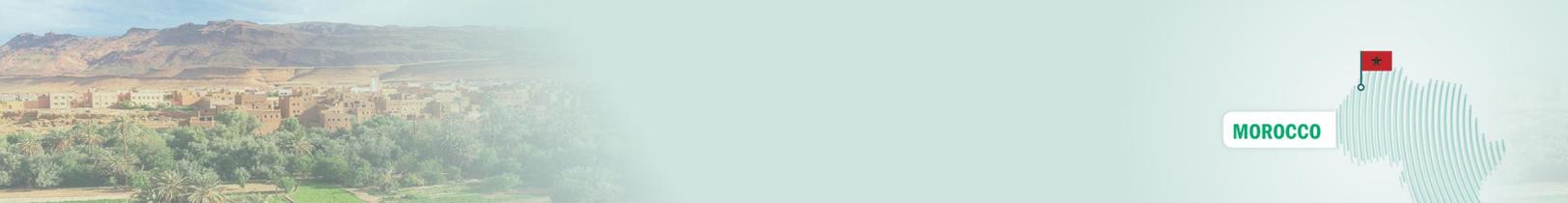
Therefore, more examples of successful adaptation projects should be showcase in the trainings and have a specific focus in that area.

2. IMPROVE THE ENABLING ENVIRONMENT

- Reinforce the programme, in a Covid-19 context, through an inclusive and green stimulus package for the benefit of the private sector and more specifically SMEs by integrating climate change related conditions to ensure a green economic recovery that aims to reach the NDC targets.
- Promote an integrated approach in order to scale up successful green projects by the private sector, and particularly those that support NDC implementation. This approach is unfolded by supporting policies and regulations for climate change and the environment, as well as tools / instruments to leverage green private investment and funding for technical assistance on a local value chain approach.
- Revise environmental taxes for implementation. A study from the World Bank on Environmental Fiscal Reform³⁰ provides an assessment on various options and pathways.
- Expand the Moroccan experience on the development of PPP in various sectors. It can be leveraged on specific green projects in line with NDC priorities besides renewable energy sector.
- Phase out the subsidy on butane, largely used for water heating, cooking, and water pumping. The cost of the subsidy is currently about MAD 18 billion per year, representing about 30% of the government's budget deficit. The government currently covers two-thirds of the cost per bottle of butane.
- Include explicit adaptation targets in the new NDC. Mitigation has largely been covered with the current NDC, it is important to now take national adaptation planning (local, subnational and at national level) into account by defining ambitious targets and indicating a detailed roadmap on how to reach them. This revision will be an opportunity to provide green incentives or conditions in stimulus packages like Damane oxygène³¹ from the Caisse Centrale de Garantie (CCG) for Covid-19 recovery to ensure to build back greener, stronger and better.

³⁰<https://openknowledge.worldbank.org/bitstream/handle/10986/34030/Environmental-Fiscal-Reform-in-Morocco-Options-and-Pathways.pdf?sequence=4&isAllowed=y>

³¹<https://www.ccg.ma/fr/espace-media/actualites/covid-19-la-ccg-lance-la-garantie-exceptionnelle-damane-oxygene-pour-venir>



3. REPLICATE NATIONAL SECTORAL CLIMATE FINANCE INSTRUMENTS

- Leverage the MorSEFF success story in financing climate change projects and extend the model (financing line, technical assistance, and financial incentive) to other sectors such as transport, buildings, agriculture or waste.
- Provide sufficient financial incentives by local banks to allow dynamic financing lines (such as low interest loans, guarantees or other risk mitigation options). For example, in the transport sector, the vehicle scrapping and renewal programs, the financial incentives will improve the success of the programs as they would reduce or eliminate the gap between the residual value of the vehicles to be replaced and the new, cleaner ones.
- Increase blended finance from International Financial Institutions (IFIs) for NDC-related activities by the private sector, particularly targeting SMEs. SMEs are considered as risky by the local banks that are very conservative and risk-averse. These banks will welcome an increase in the availability of de-risking / risk sharing instruments developed by IFIs.

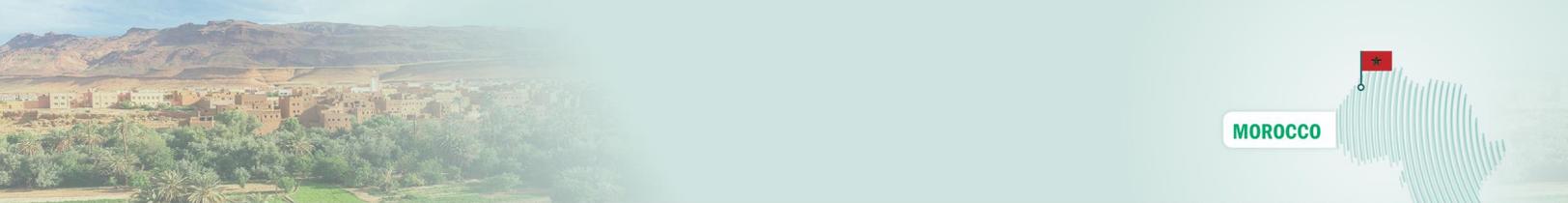
4. SCALE UP TECHNICAL ASSISTANCE TO ATTRACT PRIVATE SECTOR PROJECTS

- Provide technical assistance to local financial institutions (commercial banks, leasing and insurance companies), and to borrowers so as to complement financial incentives. Technical assistance can be used to streamline and simplify the procedures to get loans and to implement the projects as well as find ways to incentivize bankers to encourage borrowers in using “green” loans or products.

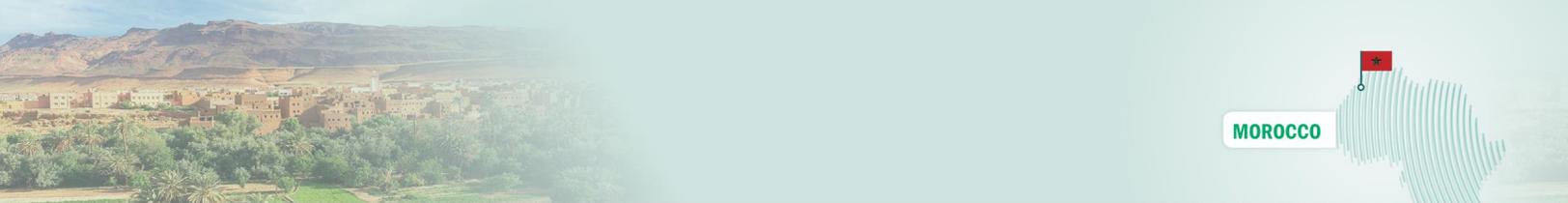


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ANNEXES

Annex 1. List of stakeholders engaged in the consultation

The list of stakeholders that were contacted during the study and invited to the online consultation workshop.

	INSTITUTION	SECTOR	NAME OF CONTACT	TITLE	EMAIL
1	Bank Regional Office (Tunis)	Communication in Climate Change	Sonia BORRINI	Climate Change Communication Officer	s.borrini@Bank.org
2		Climate Change	Balgis OSMAN-ELASHA	Principal Climate Change Expert for North Africa	B.OSMAN-ELASHA@BANK.ORG
3		Climate Change	Diego FERNANDEZ DE VELASCO	Senior Consultant Climate Change and Green Growth for North Africa	D.DEVELASCO@BANK.ORG
4		Regional Development	Mohamed EL AZZIZI	Regional Director for North Africa	M.ELAZIZI@BANK.ORG < M.ELAZIZI@Bank.org >;



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5		Renewable Energy	Fatma BEN ABDA	Principal Distributed Energy Solutions Officer	F.BENABDA@Bank.org
6	Bank Morocco Country Office	Morocco	Leila Farah MOKADEM	Country Manager	L.MOKADEM@BANK.ORG
7		Economist	Brice MIKPONHOUE	Country Portfolio Officer	B.MIKPONHOUE@BANK.ORG
8		Climate Change and Water	Mohamel EL OUAHABI	Task manager for water and sanitation	M.ELOUAHABI@Bank.org
9	GIZ	Energy Efficiency	Youssef AFKIR	Advisor for Programme for Energy Efficiency in Buildings	youssef.afkir@giz.de
10			Farid OUIDDER		farid.ouidder@giz.de +212(0) 661-384-073
11	UNDP	Environment and Climate Change	Amal NADIM	Chargée de programme Energie and Changement Climatique	amal.nadim@undp.org
12			Abdelatif SAHIBI	Coordinateur de 4 projets changement climatique	abdelfetah.sahibi@gmail.com



13	Natural Eco Capital	Climate Change tool kit for SME	Eugene Itua	Team Leader	eugeneitua@gmail.com
14		Climate Change tool kit for SME	Belynda	Morocco Country Expert	belynda@oneworldgroup.co.za
15		Climate Change tool kit for SME	Sarah	Morocco Country Expert	Sarah@oneworldgroup.co.za
16	Ministry of Energy, Mining and Sustainable Development, Secretariat of State for Sustainable Development	NDC Focal Point, GCF focal point	Bouzekri Razi	Directeur Changement Climatique au Secrétariat d'Etat de Développement durable (SEDD)	bz.razi@gmail.com RAZI@ENVIRONNEMENT.GOV.MA
17		Climate Change	Rachid Tahiri	Head of Climate Change and Green Economy Division	r_tahiri@yahoo.fr
19	CGEM General Confederation of Moroccan Enterprises	Private sector, climate change	Houda Bouchtia	Directrice , Entreprise climat	bouchtia@cgem.ma



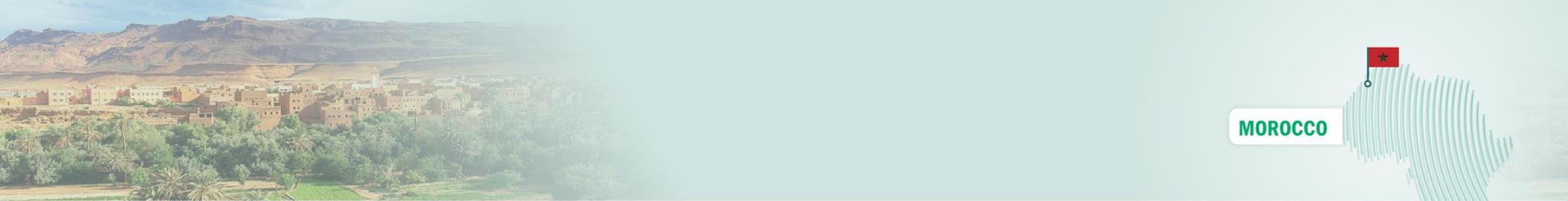
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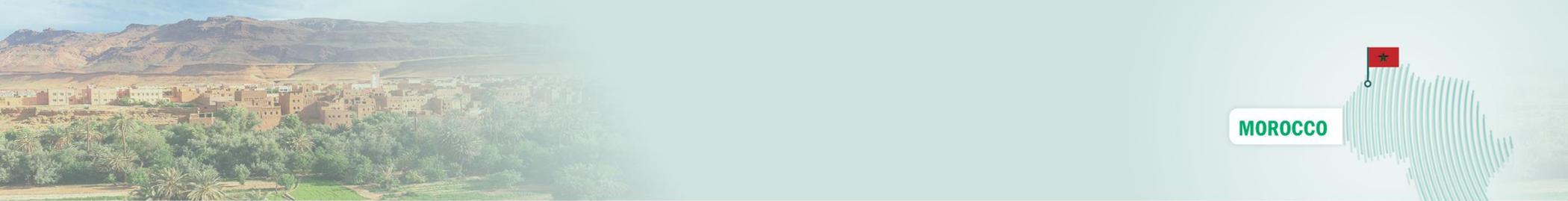
20	Ministry of National Territory Development, Urban Planning, Housing and City Policy	Energy Efficiency	Souraya Khalil	Directrice des affaires technique de la construction du bâtiment	khalisoraya@yahoo.fr
21		Energy Efficiency	Jamila El Harizi	chef de division	Jamila.elharizi@gmail.com
22		Energy Efficiency	Nada el Moaden	chef de service au développement durable	Essabai1991@gmail.com
29	Moroccan Agency for Solar Energy (MASEN)	Energy	Sultana Ajem		s.ajem@masen.ma ' +212 666 01 29 63
34	Agence de Développement Agricole (ADA),	Agriculture	Meryem Andaloussi		m.andaloussi@ada.gov.ma meryem.andaloussi@gmail.com ' +212 6 61 56 57 81
35	Office National du Conseil Agricole	Agriculture			
43	Caisse de Dépôt de Gestion (CDG)	Financial Intermediary	Laila Mikou		laila.mikou@cdgcapital.ma ' +212 5 22 23 97 56



46	AFD	Donors	Hervé Dubreuil		<u>(0537) 63 23 97</u> <u>AFDRabat@ma.groupe-afd.org</u>
53	BMCE	Finance	Soraya Sebti		<u>ssebti@bmcebank.co.ma</u> ' <u>+212 679 79 28 24</u>
54	Attijari	Finance	Ouafaa GHAOUAT		<u>o.ghaouat@attijariwafa.com</u> ' <u>+212 522 54 53 57</u>
57	Crédit Agricole	Finance	Amal EL MALOUANI		<u>elmalouani@creditagricole.ma</u> <u>05 37 21 72 55</u>
58	4C		Rajae CHAFIL		<u>4cmaroc@gmail.com</u>
59	Environmental department	Direction des Changements Climatiques, de la Diversité Biologique et de l'Economie Verte			<u>dccbev@environnement.gov.ma</u> <u>(+212) 537 576 641</u>
60	NDA Body - Ministry of Energy, Mining and Sustainable		Bouzekri Razi		<u>bz10.razi@gmail.com</u> <u>razi@environnement.gov.ma</u> ' <u>+212 673 083 478</u>



	Development, Secretariat of State for Sustainable Development			
61	Austrian Development Cooperation		Michael Berger	Casablanca@advantageaustria.org 212 522 22 32 82
62	Swiss Development Cooperation		Lyoubi Mouna	mouna.lyoubi@eda.admin.ch
63	AMEE		Mourad Hajjaji	mhajjaji@gmail.com
64	Solar Cluster		Fatima Zahra El Khalifa	f.elkhalifa@clustersolaire.ma +212 6 62 76 28 93
65	CGEM, COMMISSION NOUVELLE ECONOMIE CLIMATIQUE		Said Hadi	r.rochd@cgem.ma +212 522 98 39 71

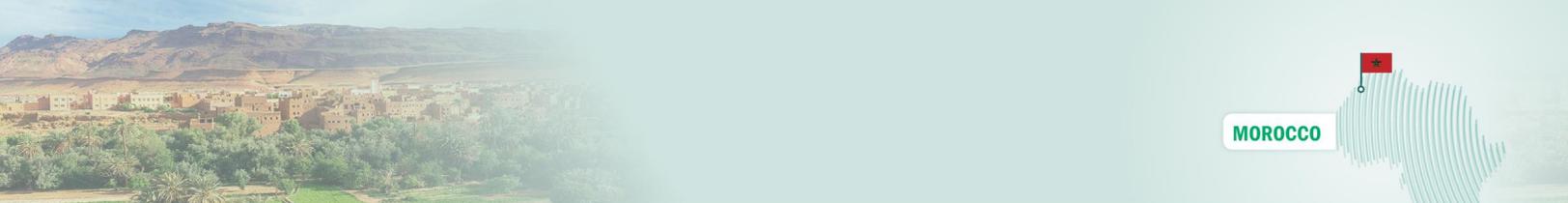


66	I'Institut de Recherche en Energie Solaire et Energies Nouvelles (IRESEN)		Badr IKKEN		kken@iresen.org <u>'+212 (0) 537 68 87 33</u>
67	HBF		Bauke Baumann		Bauke.Baumann@ma.boell.org <u>'+212 661 13 16 31</u>
68	FES		Moncef Mghazli		moncef@fes.org.ma <u>'+212 (0) 537 67 50 57</u>
69	KAS		Helmut Reifeld		Helmut.Reifeld@kas.de <u>'+212 5 37 76 12 32/33</u> <u>+212 6 67 69 49 13</u>
70	Region Souss Massa Direction Régionale de L'Environnement /SM		Khadija SAMI		samikhadija@gmail.com <u>0661702337</u>
71	SIE		Noureddine Hany		noureddine.hany@sie.co.ma



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72	New Work Lab		Fatim Zahra Biaz		(+212) 05 22 273 274
73	Ministere de l'Industrie du Commerce et de l'économie verte et numérique		Badr el Fadili		belfadili@mcinet.gov.ma
74	Bank Al Maghrib		Marwane El Ajmi		m.elajmi@bkam.ma
75	Maroc PME		Houria Nadifi		houria.nadifi@marocpme.ma



Annex 2. Pipeline of potential private sector green investment projects

The table below lists the private sector; green investment related projects identified with the Bank’s criteria of being minimum above \$ 10 million as a ticket size.

These projects were discussed with the Bank’s Task Managers from Transport, Energy Efficiency, Renewable Energy, Waste Management and Industry divisions.

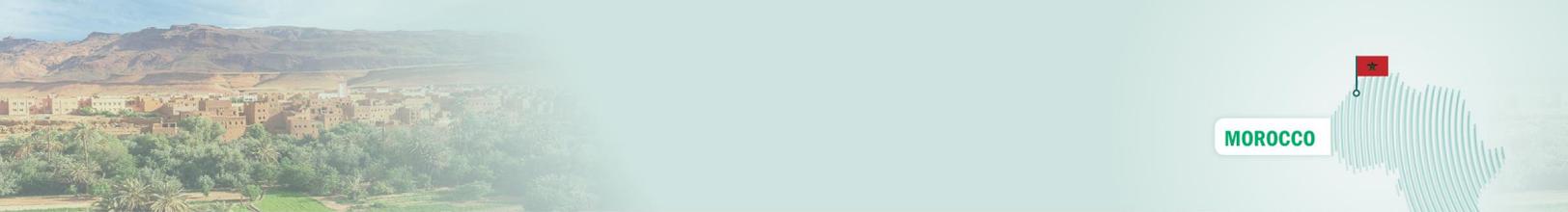
#	NAME OF THE PROJECT	PROJECT INITIATOR	MITIGATION /ADAPTATION	TOTAL PROJECT COST \$	KEY SECTOR	GEOGRAPHICAL AREA IN THE COUNTRY
1	National program for the promotion of solar pumping in irrigation	AMEE	Mitigation	\$360 M	Renewable Energy	All of Morocco
2	Energy efficiency financing program for new buildings in the residential sector in Morocco	MATNUHPV / AI Omrane/AF D/GIZ	Mitigation	\$7 MM (10 years)	Green buildings and Smart Cities	All of Morocco
3	The reuse of treated wastewater from the city of Troudant and Agadir in the Tizert mining site	Managem	Adaptation	\$42M	Water and Irrigation	Souss massa
4	Capture and recovery of the CO₂ released by the reaction to produce phosphoric acid by sulfuric attack on the phosphate ore	OCP	Mitigation	\$32 M		
5	100% recycling and recovery of household waste "Zero Dumps"	Ardi Maroc	Mitigation	\$108 M	Waste Management	



6	Realization of the first Bus rapid transit (BRT) line of the city of Agadir	SDL Mobility	Mitigation	\$90M	Transport and Infrastructure	Agadir
7	Realization of the 2nd Bus rapid transit (BRT) line of the city of Agadir	SDL Mobility	Mitigation	\$30M	Transport and Infrastructure	Agadir
8	Energy recovery from waste: cogeneration pyrolysis technology in Agadir	SDL waste	Mitigation	\$45M	Waste Management	Agadir
9	Low-emission management and treatment of agricultural waste in the Sous-Massa region	SM Regional Council / COPAG / AGROTECH	Mitigation	\$55M	Waste Management / Agriculture	Souss massa
10	Restructuring of the public transport network in the territory of Marrakech	SDL BUS CITY MOTAJADID A	Mitigation	-	Transport and Infrastructure	Marrakech
11	Public lighting renovation project, switching to LED streetlights in the city of Fez	City of Fez SDL public lighting	Mitigation	\$36M	Energy Efficiency	Fez
12	Project to improve the energy performance of public lighting of the group of municipalities in the city of Agadir	City of Agadir SDL public lighting	Mitigation	\$11M	Energy Efficiency	Agadir
13	Overhaul of the public lighting plan for the city of Kenitra: 40,000 light points	City of Kenitra SDL public lighting	Mitigation	-	Energy Efficiency	Kenitra
14	Renovation of Oujda's public lighting network	City of Oujda SDL public lighting	Mitigation	\$15M	Energy Efficiency	Oujda



15	Renovation of the management of the public lighting park in Meknes	City of Meknes SDL public lighting	Mitigation	-	Energy Efficiency	Meknes
16	Renovation of the management of the Rabat public lighting park	City of Rabat SDL public lighting	Mitigation	-	Energy Efficiency	Rabat
17	Optimization and management of the Martil Commune public lighting park (SDL public lighting)	Town of Martil	Mitigation	-	Energy Efficiency	Martil
18	PV Machraa El Ain Solar Park Project	COPAG	Mitigation	\$120M	Renewable Energy	Taroudant
19	Marrakech solar power plant project	Novare Energy	Mitigation	\$150M	Renewable Energy	Marrakech
20	Agriculture and Carbon Development in Drylands	OCP	Mitigation	-	Climate Smart Agri-business and forestry	
21	Infrastructure related to LNG import and the utilization of natural gas in Morocco	MEME /USTDA	Mitigation	-	Transport and Infrastructure	Kenitra and Nador
22	Space heating stoves	AMEE	Both	-	Forestry	mountainous areas
23	Substitution of fuelwood by biomass waste in public Hammams	AMEE	Both	-	Forestry	All of Morocco
24	Energy labeling of motorcycles	AMEE	Both	-	Transport and Infrastructure	All of Morocco



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