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MOROCCO
SUMMARY

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UN HABITAT
FOR A BETTER URBAN FUTURE

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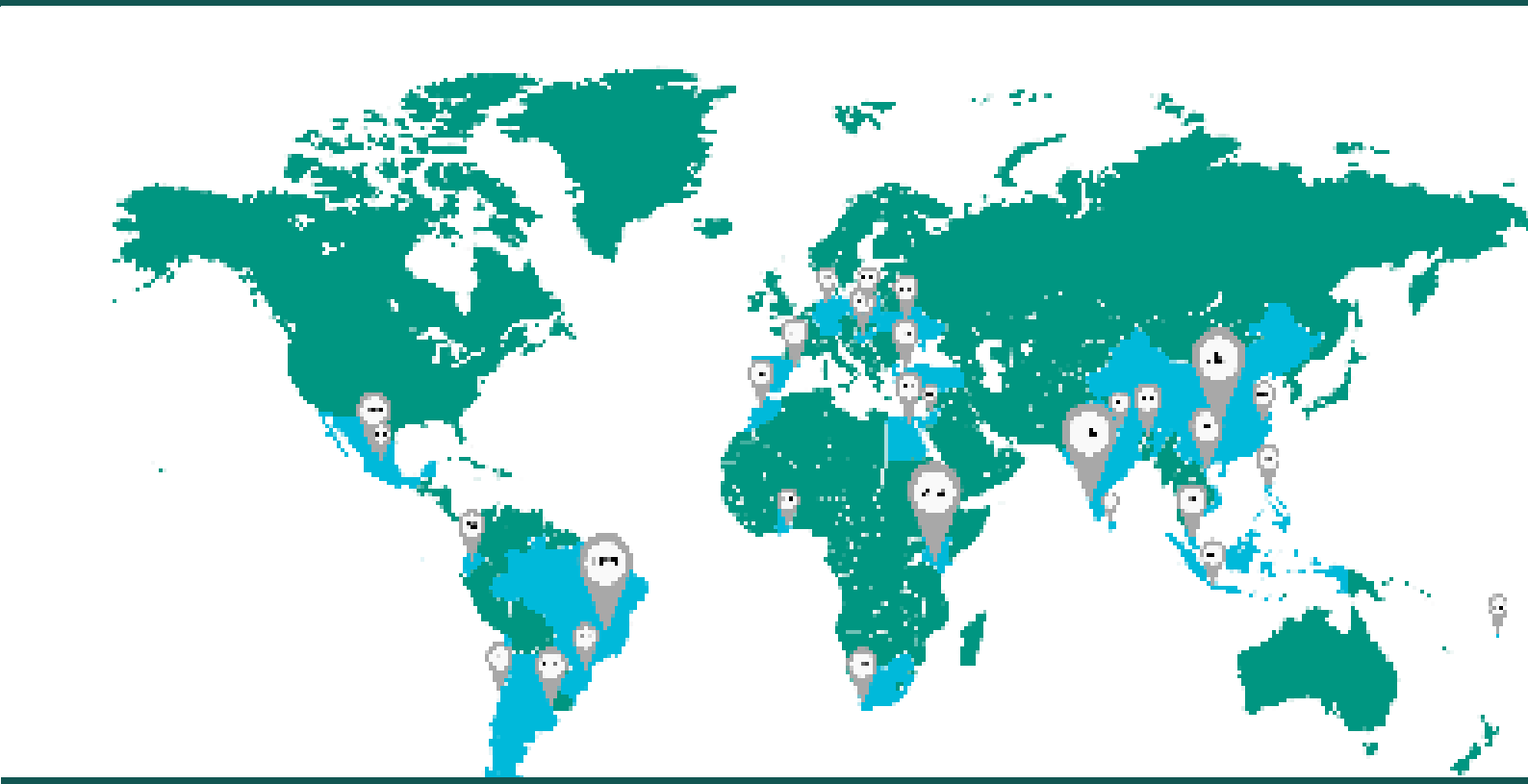

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ABSTRACT

This paper presents a summary of the Nationally Determined Contributions of the Kingdom of Morocco, which has been set in line with the New Urban Agenda and the Paris Agreement on climate change. This paper briefly discusses Morocco's policy measures to reach its NDCs targets for mitigation and its adaptation to climate change. This paper focuses on the national and state policies and implementation strategies by the Moroccan government to reduce greenhouse gas (GHG) emissions in three sectors: energy, transport and waste management. Finally, an overview of the policies and practices of Casablanca city to meet its adaptation and mitigation objectives to climate change is presented.

COUNTRY OVERVIEW

The Kingdom of Morocco is located in the north-west part of the African continent on an area of 446,550 km^2. Morocco has a coastline of 1835km on the Mediterranean Sea and the Atlantic Ocean. In 2016, Morocco had a population of 35.27 million. Great Casablanca is the most populated city in Morocco with 3.35 million inhabitants, along with the metropolitan area Casablanca-Settat it has 6.86 million inhabitants. Fez and Tangier are the second most populated cities with around 1 million inhabitants each. In 2016, 60.68% of the country´s population was living in cities with an urban population growth of 2.16% (World Bank, 2018).

In 2017, Morocco's services and industry sector had the highest share of GDP with 56% and 29.1% respectively, while the agricultural sector's GDP share was only 14.8% (CIA, 2017). A referendum for a new constitution that specifies Sustainable Development as a right for each citizen has been held in 2017, contributing to a reformation of the Morocco´s constitution. This helped to stabilize nationwide development, maintaining the country´s economic growth and kept inflation below an annual rate of 2% in recent years.

SUMMARY OF NDC MOROCCO´S TARGETS

In 2016, Morocco approved the Paris Agreement and delivered its Nationally Determined Contributions to the UNFCCC. Support to the NDC targets comes from representatives of ministries and international organizations, ensuring their support in the implementation plans. The NDC was an improved version of its INDC submitted in June 2015. Morocco pledged to reduce GHG emissions by 17% below a business-as-usual (BAU) scenario by 2030 (excluding emissions reduction contributions from agriculture, forestry and other land use). In case of a sufficient international financial support, Morocco intends to reduce GHG emission by 42% below BAU by 2030 (conditionally). Between 2020 and 2030, a reduction of 527 Mt CO_2 can be reached, as it is demonstrated in Figure 1, showing the different mitigation scenarios. Morocco has also set adaptation objectives in the agriculture, water and forests sectors. The cost of adaptation strategies and plans between 2020 and 2030 are estimated to be 35 billion USD (UNFCCC, 2016).

Morocco aims to reduce the energy consumption by 15% by 2030

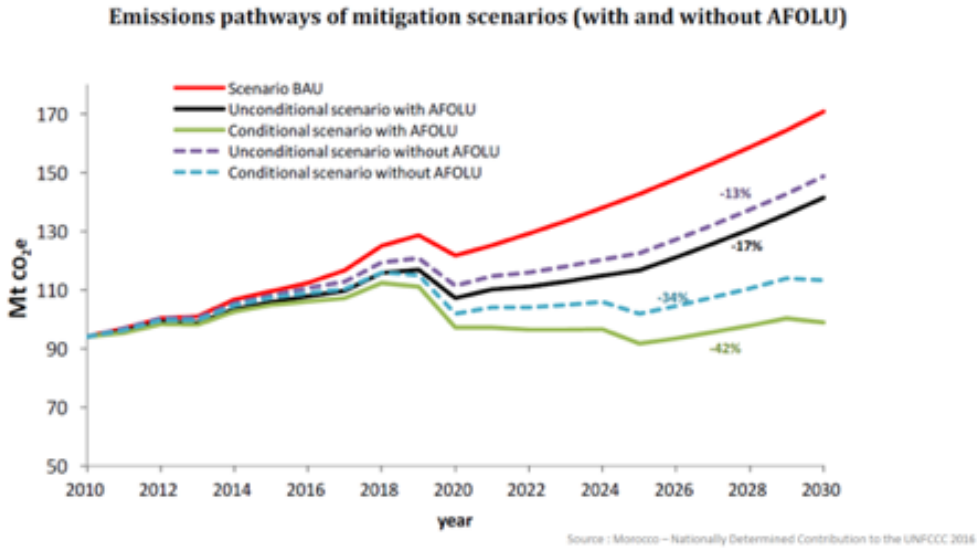


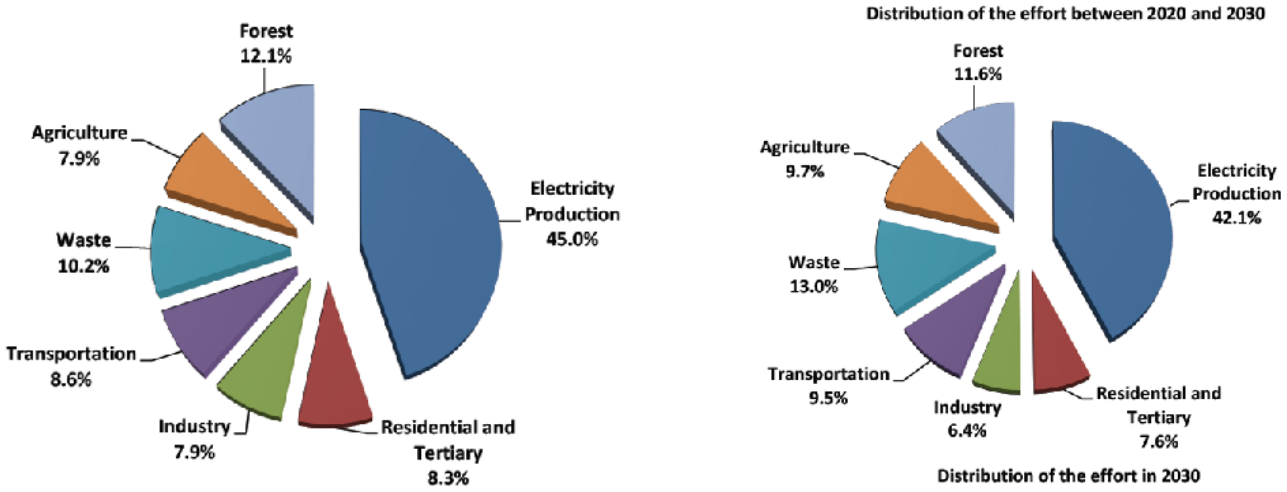
Figure 1 Emissions pathways of mitigation scenarios (with and without AFOLU)

Morocco aims to reach its GHG emission reduction target by transforming the energy sector, meanwhile keeping the demand side in the energy market satisfied. This transformation can be achieved through a decrease in the foreign energy sources and promoting the implementation of renewable energy projects in Morocco. Many ambitious targets are set in the NDC:

1. Morocco aims to reduce the energy consumption by 15% by 2030.
2. Until 2030, Morocco plans to produce 52% of its electricity from renewable energy source, which will be divided as follows: 30% from solar energy, 20% from wind energy and 12% from hydraulic energy.
3. Morocco intends to increase the use of natural gas, as well as provide industries with imported natural gas by pipelines. The contribution of each sector is demonstrated in the Figure 2.

28.84% of Morocco´s CO_2 emissions have come from its transport sector in 2014 (IEA, 2014). As a mitigation effort stated in the NDC, the transport sector is expected to contribute to a reduction of 14.4% in the energy generation and consumption in Morocco by 2030. Morocco aims to transform the urban public transportation system from conventional energy to renewable energy. In order to decrease GHG emissions from the transport sector, Morocco intends to spend USD 200 million to improve urban road transportation, for example, investing in a Taxi Fleet Renewal Programme (UNFCCC, 2016). Morocco has also developed strategies to eliminate climate change in the waste sector.

The NDC of Morocco include a national waste recovery programme, in which Morocco intends to establish a standardised waste management master plan for all regions in the Kingdom of Morocco. Morocco's resource efficiency plan includes achieving recycling centres for urban areas by 2020 and collection of 100% of household waste by 2030. As a first step, Morocco intends to implement a pilot project to achieve a 20% of recycling rate by 2020. Along with previous actions, Morocco intends to raise awareness on waste issues (UNFCCC, 2016).



Distribution of the expected mitigation effort by sector to achieve the overall target (with AFOLU) (UNFCCC, 2016)

POLICIES AND STAKEHOLDER MAPPING

National level

Until 2011, Morocco was a constitutional monarchy, ruled by the King Mohammed VI, who had absolute control over all executive and legislative decisions. Due to the political pressure derived from the Arab Spring of 2011, King Mohammed revised the constitution, which was approved in a referendum in 2011 paving the way for political and economic reform in Morocco. Even though the new constitution has given more power to Morocco's parliament, key decisions are still controlled by the monarchy, such as appointing the prime minister from the party that wins the most seats in the parliamentary elections (Karam, 2011). Morocco's elected parliament consists of two chambers practicing legislative power and has a government that has legislative and executive power. Through the multi-party system, the coalition government (cabinet of Morocco) is formed from the winning parties after elections, yet the King appoints the prime minister and other government ministers. The Justice and Development Party won the 2016 election with 125 out of the 395 seats. In the second place came the Authenticity and Modernity Party with 102 seats a party that has been founded in 2008 by the monarchy (López García & Hernando de Larramendi, 2017)

Even though there is an elected regional government in Morocco, it is still not fully independent from the central government, consequentially, all large-scale projects have to be discussed between all parties, ministries involved and respective municipalities. Actions to implement environmental policies are being taken mainly by three ministries:

- Ministry of Energy, Mines, Water & Sustainable Development,
- Ministry of Urbanism, National Land Settlement, Housing & Policy of the City
- Ministry of Equipment, Transport, Logistics & Water

Until 2003, Morocco had no environmental policy except some plans to tackle water management. The same year the country had passed three laws regarding environmental policy. The first law was established to ensure the protection and conservation of the environment, the second law tackled air pollution and the third law addressed environmental impact assessment. The new constitution from 2011 highlighted that sustainable development is a right for each citizen; since then, a national strategy and action plans has been put in place United Nations, 2014.

Morocco has established the national competence centre for climate change mitigation and adaptation between 2013 and 2018. The aim is developing and implementing national climate policy -through capacity building- as well as sharing information on climate change on the platform. The centre is run under the Ministry of Energy, Mining, Water and Environment; nevertheless, this centre does work with all stakeholders involved in the implementation of different environmental policies. The centre is also active on the regional level in Africa by cooperating with different partner in the region. ("Establishment of a national competence center for climate change mitigation and adaptation in Morocco (4C Maroc)", 2018). To develop a partnership between national and international institutions, the Mosaicc portal has been established in Morocco; the active web portal is used for exchanging scientific information that supports decision makers by allowing users to access and present data and studies to city authority and government officials (United Nations, 2015).

CONCLUSION

Local government:

After the constitutional reformation in Morocco in 2011, the first regional election took place in 2015. Since then the 12 administrative regions in Morocco are governed by an elected regional council. The region is formed of smaller provinces as well. Each province has a local elected government, which does not have autonomy from the central government. The provincial governments take care of local duties and obligations assigned to them by the central government. In every municipality there is a mayor (Sadiqi, 2015).

ENERGY

Even though Morocco has a small effect on the total global GHG emissions, the government intends to reduce energy consumption in the future (International Energy Agency, 2014). In the energy sector, clean fuel was one of the solutions implemented by policy makers. The solar power plants play a big role in the generation of clean electricity in Morocco. According to the World Bank, by 2020 the largest solar power plants in the world will be established in the city of Querzazate. This project will reduce reliance on energy import and help avoid 240 000 tons of CO_2 equivalent per year (World Bank, 2015).

Clean fuel - the solution for Morocco´s energy sector

MOBILITY

Between 2012 and 2014, Morocco´s CO_2 emission per capita decrease due to the implementation of the recent environmental policy; a big share of this drop was thanks to the development of the public transport system, a tram line and BRT system (World Bank Databank, 2018). The Moroccan government has set strategies to reach the CO_2 emission reduction target of its NDC in the transport sector by further improving the public transport infrastructure making it more sustainable and promoting non-motorized transportation, such as walking and cycling. In 2015, within P4R project, the World Bank supported the Moroccan government with 3 billion US dollars over a decade to address the challenges of transportation in urban areas. The program has two objectives: improving transport sector management (strengthening institutions) and establishing a new urban transport infrastructure to improve citizen's access to economic opportunities and social services.

The government launched a comprehensive program from 2016 until 2019 across Moroccan regions that has already achieved tangible outcome, such as the extension of the tram line in Casablanca and establishment of the green Marrakech bike network in the city of Marrakech (World Bank, 2017).

WASTE MANAGEMENT

In Morocco the urban waste generation is 0.76 kilos per capita, while the rural waste generation per capita is 0.3 kilos per day per capita. Between 2008 and 2013 the total waste disposed in landfills has increased from 10% to 37%. Since 1990 Morocco has ratified international agreements that address environmental degradation, such as, Rotterdam Convention, the Convention on Climate Change in 1995 and the Kyoto Protocol in 2002. In the new constitution of 2011, the waste management policies have been reformed, since sustainable development is a priority area for policymakers. Morocco has set new strategies and action plans to be implemented by 2030 (World Bank, 2013). The national solid waste programme was developed by the ministries of Interior, Finance and Environment. The World Bank provided the programme with financial and technical support. The Moroccan government intended to implement solid waste management programs in cooperation with international organisations, experienced in this field. Therefore the Environmental Protection and Management program was established in 2010 in cooperation with German Corporation for International Cooperation (GIZ). The program was implemented to provide capacity building for local communities in Morocco (Perkins, N., Ajir, A., El Ouazzani, L., 2014).

Between 2008 and 2013 the total waste disposed in landfills increased from 10-37%

CITY EXAMPLE: CASABLANCA

Located in the western part of Morocco, Casablanca is the largest city in Morocco with a population of 3,359,818 (2015). Casablanca has an area of 220 km^2 and forms a part of larger metropolitan area called the grand Casablanca. Casablanca has the largest economy in Morocco, which the industrial and service sectors have a biggest share in it (World Bank, 2017). Casablanca hosted the Smart City Expo Casablanca for the years 2016 and 2017, during which the city shared its successful experience in the field of innovation and sustainable development. Currently the city is experiencing an economic and population growth, causing an increasing demand for energy. The local authority in Casablanca intends to increase its energy efficiency by combining an electricity consumption reduction plan and promoting electricity production from renewable energy resources (Morocco, 2017).

Only 15% of the city population used public transport in 2005. The city's local authority intends to increase access to public transport to 21% by 2019. Casablanca public transport consists of BRT, tramway and bus network, which effectively connects city's neighbourhood and contribute to the GHG emissions reduction from transport sector. The municipality has planned 3 tram lanes and 4 BRT lanes by the year 2022. By strengthening public transport, the city expects to reduce the private car usage. Alongside the tram lanes, to increase safety and security, a green corridor and pedestrian facilities has been established. The planed transport infrastructure will also contribute to the integration of different neighbourhoods in the whole city plan (Casablanca City, 2018).

Although the number of people using public transport in the city has increased since 2005, Casablanca is still facing many challenges. First, the car is still considered a marker of social status and so a high share of residents depends on the private cars in the city. Second, cultural barriers make it difficult for women to use two wheels transport modes, for instance, bikes and scooters. Third, though the city has a sophisticated public transport plan, the citizens are still not fully involved in the planning and implementation process of transport projects. The impact of the project implementation has not yet been measured in the city of Casablanca; however, an assessment of the results should be done in 2022 after the completion of the tram lines and BRT system (Sdoukopoulos E., Kose

P., Gal-Tzur A., Mezghani M., Chesterton V., Boile M., Sheety E. 2016).

Between 2000 and 2005, the waste management sector in Casablanca had to deal with several problems. For example, the damaged waste infrastructure didn't cover the needs of the residents. To increase efficiency the municipality of Casablanca privatised the waste management sector. Waste management in Casablanca is divided into two sectors: management of waste treatment and cleanliness management. In 2008, the city delegated the management of waste treatment to the Moroccan-American company Écomed Casa for a period of 18 years. In 2014, the city delegated the cleanliness management to two companies for a period of 7 years. The first company is called Sita Blanca, a French company affiliated to the Suez Environment group. The second is called Averda Casa, a Lebanese company affiliated to the group Averda International. After submitting the NDC in 2016, the private companies had to improve their strategies and equipment to cope with the proposed targets; these improvements included new waste infrastructure installation and new monitoring methods to ensure efficiency, as well as, a plan to increase the share of recycled waste (Casablanca City, 2018, 2018).

The municipality in Casablanca has a strategy to improve the waste management sector in the city by 2020. They aim to improve waste management in the city by separating waste on the household level and increasing the amount of waste being recycled. The municipality plans programs to reach full efficiency in the waste collection and treatment process. The city plans to close the largest landfill in Casablanca by April 2018 as a first step in tackling the expansion of landfills near Casablanca.

According to the climate action tracker (2018), Morocco will meet its renewable energy target of 2020 and by continued implementation of its programmes, Morocco will also meet its 2030 renewable energy target.

Casablanca will increase the amount of waste being recylced in the future

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