

ASSESSING THE EVIDENCE:

MIGRATION, ENVIRONMENT
AND CLIMATE CHANGE IN

MOROCCO



International Organization for Migration

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ACRONYMS AND ABBREVIATIONS

CNEDD	Charte Nationale de l'Environnement et de Développement Durable
GDP	Gross domestic product
INDH	Initiative pour le Développement Humain
IOM	International Organization for Migration
IPCC	Intergovernmental Panel on Climate Change
MENA	Middle East and North Africa
NGO	Non-governmental organization
PJD	Party for Justice and Development
PNRC	Plan national contre le réchauffement climatique
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

EXECUTIVE SUMMARY

As a polymorphic migratory profile and a climate-vulnerable country, Morocco is particularly concerned with environmentally induced mobility. On one hand, environmental and climatic factors account for migration to Morocco from sub-Saharan and movements out of and within the country, especially to the major coastal cities; and on the other hand, they also put further pressure on natural resources in the most part of rural areas. With the severe impacts of climate change expected to rise in intensity in the coming decades, sudden-onset events, such as floods and storms, as well as slow-onset processes, such as droughts and desertification, will further intensify these movements and challenge local and national policymakers.

Up to this point, there has been no comprehensive assessment of the evidence on environmental migration in the country. Research has rather focused on specific environmental factors or migratory movements. This report sets out to provide a comprehensive overview of the state of the environment and migration nexus in Morocco by collecting the evidence available to date in scientific research and the publications of the Government of Morocco and international organizations.

This report: (a) carefully lists both the slow-onset and the sudden-onset climate impacts and (where possible) points to migratory movements and trends connected to or induced by these impacts; (b) discusses the state of different policy areas with respect to environmental migration, their interconnectedness and their potential for further development; and (c) assesses the state of research and identifies major knowledge gaps that should be filled through future research.

The report concludes the following:

- (a) Morocco is vulnerable to the adverse effects of climate change. Both slow-onset processes, such as desertification, sea-level rise and salinization, as well as sudden-onset events, such as floods and storms, are expected to worsen in the future, affecting more people in all parts of the country.

- (b) Displacement due to extreme weather events is already a reality and slow-onset climate impacts are likely to already impact the movement of people – notably rural-to-urban migration and the settlement of nomadic pastoralist communities. Internal and international immigration movements also have an impact on vulnerable degraded areas. The country’s seismic activity further enlarges the risk of environmentally induced displacement.
- (c) Major migration policy and climate policy developments are under way and high on the Moroccan policy agenda. However, both policy areas need to be better linked to effectively tackle the many dimensions of environmental and climate migration as a cross-cutting issue.
- (d) More empirical research is needed on the linkages between migration, environment and climate change, in order to understand the realities of human mobility in a changing climate and support the policymaking process through evidence. Research in Morocco has until now focused on specific climate stressors or migratory movements. In a next phase, it should stress the linkages and the interconnectedness.

The report holds that only by the combined action of research and policymaking, environmental and climate migration can be effectively tackled in Morocco. Reliable empiric evidence on the magnitude of migration, displacement and planned relocation to, within and from Morocco due to environmental and climate change should thereby be the basis of further policy planning.

I

INTRODUCTION



I. INTRODUCTION

The Kingdom of Morocco (hereafter Morocco) lies in the north-west of the African continent, next to the Atlantic and the Mediterranean Sea, bordered by the Sahara in the south. The Strait of Gibraltar, 13 km of water separating the country from Spain in the north, is symbolic for the country's role in the course of the centuries: seen from Africa, it is a gateway to Europe; seen from the north, it is an access to Africa. Migration in both directions has been part of the country's experience ever since. Having been an exporter of labour for the larger part of the twentieth century and the first part of the twenty-first, Morocco recently is turning to be a country of transit and even destination.

The Atlas Mountains in the middle of the country, the oases and the desert in the south and the littoral with its coastal cities in the north-west make Morocco highly diverse. This is mirrored by its population, which speaks Arabic, Tamazight, French and Spanish, as well as its highly diverging climate within the country. As diverse as the country is, so are the effects of climate change that Morocco and its population face.

This overview aims to show which changes Morocco is and will be confronted with now and in the future with regards to environmental migration. In order to do so, it provides background information on the climate, politics, economy and migration history of the country. In a second step, it discusses slow- and sudden-onset processes and events Morocco is suffering from due to environmental or climate change and highlights the vulnerabilities that come hand in hand with these changes. The overview then goes on to highlight which policies are in place in the area of emigration and immigration, urbanization and poverty reduction, as well as climate change and climate change adaptation and how they integrate mobility (or the lack thereof).

The main findings of this desktop research are as follows: (a) research on climate-induced migration in Morocco is very underdeveloped and evidence on environmental migration in Morocco is not or only very scarcely available; and (b) environmental migration has been mentioned in certain government policies, but is not yet an item on the policy agenda

of the country. The recently drafted national climate change policy, however, entails remarks on immigration by King Mohammad VI. This gives the impression that the stakeholders involved in climate change policy in Morocco would be receptive of introducing environmental migration as a cross-cutting policy issue.

I.1. Background and context

I.1.a. Geography and climate

Morocco borders the Mediterranean to the north and the Atlantic Ocean to the west, and neighbours Algeria and Mauritania to the east. The total landmass of the country is 710,850 km² (IUCN, 2014). Altogether, the country accounts for 3,400 km of coastline, as well as high altitude mountainous regions (such as the Atlas) with peaks higher than 4,000 m in altitude. Roughly speaking, the country can be divided into four geographical regions: (a) coastal planes; (b) hills to the north; (c) hills to the centre including the Atlas; and (d) desert hills (World Bank, 2016d).

This geographical setting makes for a highly diverse climatic situation. Morocco is located between two climatic zones, the north being temperate and the south being tropical. The anticyclone of the Azores (to the west) and the Saharan depression (to the south-east) further enlarge spatial and temporal climate variations (IUCN, 2014). Rainfall varies between 2 m per annum in the north and 25 mm per annum in the south (World Bank, 2016d). The diverse climate is also expressed by diverse temperatures: in the coastal regions, the temperature ranges from 22–25°C in the summer and 10–12°C in the winter, whereas in the interior in summer temperatures lie from 25–30°C and in winter below 15°C (*ibid.*).

Water resources are characterized by spatial and temporal scarcity and irregularity (*ibid.*). Next to population explosion and industrial growth, agricultural extension with more and more artificial irrigation is a reason for this stress on water resources (IUCN, 2014; World Bank, 2016d). Irrigation, however, is needed, as only 18.03 per cent of the country's landmass is arable and can be used for agriculture (World Bank, 2016a).

I.1.b. Politics and governance

Morocco is a constitutional monarchy. The throne is hereditary, and King Mohammad VI has been chief of State ever since his ascension to the throne in 1999. He has far-reaching political and judicial authority that is counterbalanced by an elected bicameral parliament: the House of Councillors is elected indirectly by select members of an electoral colleague, whereas the House of Representatives is elected in universal elections every five years. According to the constitution, the king appoints the prime minister and the members of government. Since 2011, Abdelilah Benkirane of the moderate Islamist Party for Justice and Development (PJD) is Head of Government (Government of Morocco, 2015b).

In political terms, Morocco has been relatively stable over the past decades. The events of the Arab Spring – the Moroccan version of which took the name “February 20th Movement” – led to the appointment of PJD leader Abdelilah Benkirane as prime minister after early elections and constitutional changes. The new constitution of 2011 that was pushed forward by the royal house intends to give more balanced constitutional powers and grant more cultural and human rights. It also seeks to further decentralize the country’s governance and secure the state of law. These reforms are further pursued by the ruling PJD (World Bank, 2016b; Government of Morocco, 2015c).

Local and regional elections in September 2015, which took place in the framework of the new territorial reform, have changed the political landscape; the PJD is leading in Morocco’s larger cities, whereas the oppositional Party for Authenticity and Modernity (PAM) took over leadership in the country’s regions. This new constellation is expected to have repercussions on the composition of government to be elected through the legislative elections in 2016 (World Bank, 2016b).

I.1.c. Population

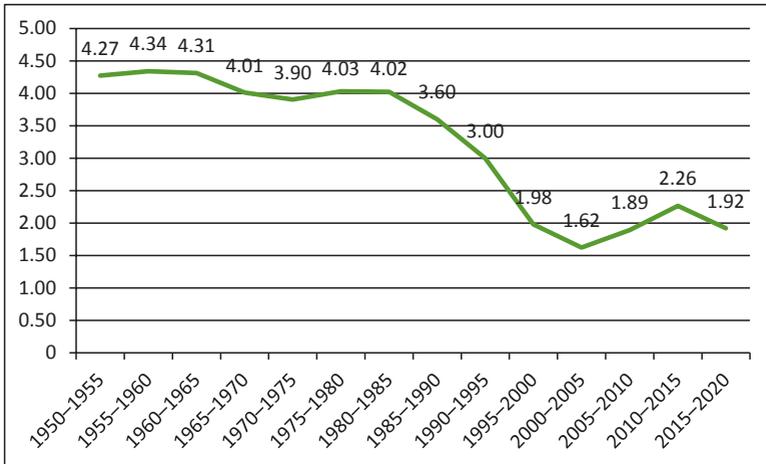
With an estimated 33.9 million citizens in 2014 (UN DESA, 2014b), Morocco is the fortieth biggest country on earth in terms of population. The population density is rather high in comparison to the Middle East and North Africa (MENA) region in general (77 and 37.74 inhabitants

per km² of land respectively), and the population grows at 1.34 per cent a year (as of 2015, World Bank, 2016a).

Due to its long history of immigration (Visigoth and Arabic in early medieval times) and colonization (French and Spanish), the population of Morocco is diverse, both in ethnic and linguistic terms. Official languages are standard Arabic and the Berber language Tamazight, but Arabic dialect and French are also widely spoken (Government of Morocco, 2015b). Spanish is still used in some parts of the country.

In 2015, 60.2 per cent of Morocco's population lived in urban settings. After a slope in urban growth in the early 2000s, urbanization is now accelerating again and currently at 2.16 per cent (World Bank, 2016a). The United Nations Department of Economic and Social Affairs (UN DESA) projects the urbanization rate to drop slightly in the next couple of years (UN DESA, 2014a).

Figure 1: Average annual rate of change of the urban population, 1950–2015 (%)



Source: UN DESA, 2014a.

Morocco's rural population is extremely dependent on natural resources through agriculture and animal husbandry, as well as the use of biomass energy, and thus more vulnerable to climate change (World Bank, 2016d).

I.1.d. Economy

Morocco's economy underwent a severe change in the 1980s and 1990s from being a heavily indebted country towards an open, market-orientated economy. Through a series of reforms, the country was able to capitalize upon its relatively low labour costs and its proximity to Europe. Since the 2000s, the country has embarked upon a path of steady economic growth, with only occasional economic slowdowns due to the European economic crisis. This makes it a trustworthy partner for economic cooperation: an Advanced Status agreement with the European Union was signed in 2008 and a bilateral Free Trade Agreement with the United States in 2006. Foreign direct investment is high and so is financial support from the Gulf Cooperation Council and development partners (European Commission, 2015; Office of the United States Trade Representative, n.d.; World Bank, 2016b).

The main sectors of Morocco's economy are agriculture, tourism, aerospace, phosphates and textiles. The country is also working on enlarging its renewable energy capacity and aims at making renewable more than 42 per cent of its electricity output by 2020 (Government of Morocco, 2015:9).

However, economic difficulties remain: the unemployment rate (9.9% in 2014) is relatively high, in particular the continuously high youth unemployment rates (20% in 2014) drive more and more young Moroccans abroad in search for other economic opportunities (World Bank, 2016a). At the same time, it is easier to emigrate than it was a few decades ago; the transition towards a middle-income country and the concomitant social, economic and infrastructural development of the country has allowed more people to leave the country (de Haas, 2005:3). That the country's economic upsurge does not profit all, but clearly draws a division between rural and urban economic settings, is demonstrated by the fact that rural poverty is more severe than the national average (14.4% as compared to 8.9%, data from 2007, World Bank, 2016a). Only 67.08 per cent of Morocco's population (aged 15 and above) is able to read and write, making illiteracy yet another difficulty

the country faces, especially in the rural areas (data from 2011, World Bank, 2016a). Thus, reforming the education system and the judiciary, and increasing the competitiveness of the private sector remain central challenges to improve Morocco’s economic output. “Morocco has scaled up its structural reform agenda, but implementation of this agenda remains key to show transformational results” (World Bank, 2016b).

Table 1: Key facts on Morocco

Independence	2 March 1956 (from France)
Capital	Rabat
Population	approximately 33.9 million (2014)
Land area	710,850 km ²
Religion	Officially and predominantly: Sunni Islam
National parliament	Bicameral Parliament (House of Representatives, 395 members; House of Councillors, 250 members)
Government structure	Constitutional monarchy; one central government; 12 regions
Population growth	1.39% (2014)
Urban population growth	2.26% (2010–2015)
Urban population	59.7% of total population (2014)
Poverty rate	13% (share of working poor, below USD 2 a day)
Life expectancy	74.02 years (in 2014, World Bank, 2016a)
Infant mortality	23.6 per 1,000 live births (2014)
Adult literacy rate	67.08 % (2011)
Mean years of schooling	4.37 years
Human development ranking	129 out of 187 countries (2013)

Sources: United Nations Development Programme (UNDP), 2014; World Bank, 2016a; UN DESA, 2014a.

I.2. Migration – Evidence from the past

I.2.a. Immigration and emigration

Until recently, Morocco was perceived as a country of emigration, a sending State with a large workforce abroad that contributes to the development of the country through remittances. In recent years, however, the country's role as a transit location for those aiming to reach Europe has resulted in many migrants staying. This change is slowly being accepted by researchers and policymakers alike who analyse and react to this shift and possible "migration transition" (de Haas, 2005), "even if the collective consciousness has not yet incorporated these facts" (CNDH, 2013).

Emigration

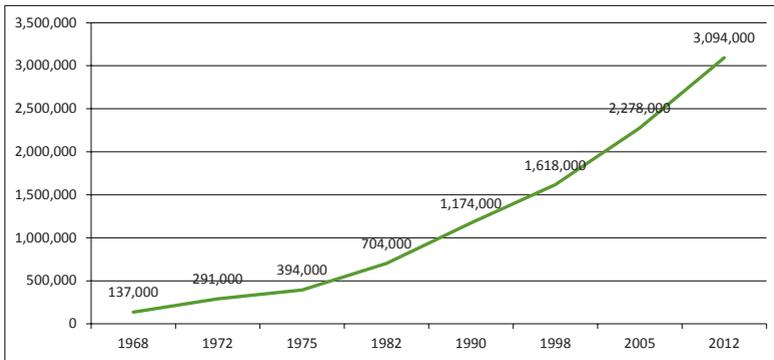
Major emigration from Morocco commenced when Morocco was under Franco-Spanish colonial rule (1912–1956). Whereas migration to Spain remained low, due to the relatively bad economic situation there (Spain was, until the 1980s, exporter of labour itself), France came to be the main destination for Moroccans already during the two world wars. In the 1950s and 1960s, Moroccans then helped building up the war-struck French economy. From 20,000 in 1949, the Moroccan foreign-born population in France climbed to 53,000 in 1962 (de Haas, 2005).

A considerable increase in the magnitude of Moroccan emigration and a diversification of destinations, however, took place from 1962 onwards. In that year, the country started to sign labour recruitment agreements with several European countries. The agreements with industrialized nations, such as Western Germany, France, the Netherlands and Belgium, led to a rapid increase of Moroccans living abroad, yielding big diaspora communities in these countries these days. Hein de Haas computes the number of the Moroccan population in Europe to have grown from 30,000 in 1965 to 300,000 in 1972 (ibid.).

With the end of labour migration schemes to most European States following the oil crisis in the early 1970s, family reunification became the main reason for Moroccans to migrate to Europe. Current literature distinguishes two phases of that migration: "primary" family reunification with spouses and children that came to an end in the late 1980s already and "secondary" family reunification consisting of marriages of

European Moroccans to spouses from regions of origin (de Haas, 2007). Family reunification also meant the number of Moroccans permanently living abroad increased constantly. In the 1990s, next to the traditional destinations of Moroccan emigration, Spain and Italy also emerged as central destination countries. In 2010, both Southern European countries were home to an estimated 1.2 million Moroccans (de Haas, 2014).

Figure 2: Moroccan citizens living in main European destination countries (total)



Source: de Haas, 2014.

But also non-European destinations are attractive to Moroccan emigrants, even if on a smaller scale: a rather big community of 120,000 has settled in Libya, and several tens of thousands of Moroccans stay as temporary labourers in countries of the Gulf (de Haas, 2007). In recent years also, Canada and the United States have grown as destination countries, however, rather for highly educated migrants (MPC, 2013:1).

Israel continues to host a rather big Moroccan community as well. Moroccan Jews had made up a community of 250,000, but when the Jewish State was founded in 1948, many decided to move to Israel. This emigration further grew after the Arab-Israeli war in 1967. Currently, it is estimated that only 5,000 Jews live in Morocco, whereas Israel is home to around 700,000 individuals of Moroccan descent (de Haas, 2009:3).

Including the communities in Israel and the rest of the Arab world, current estimates put the number of individuals of Moroccan descent living abroad at about 4 million (de Haas, 2014). Of those officially

registered with Moroccan consulates, 90.6 per cent live in Europe, where also since 1981 an estimated 445,000 individuals regularized their status, which also sheds light on the fact that much Moroccan emigration has been irregular (MPC, 2013:1).

Although having experienced a soft decline with the onset of the European financial crisis (that hit destination country Spain extremely hard), Moroccan emigration, both through regular and irregular channels, is expected to remain high in the next one or two decades. Reasons for this are the few employment opportunities for young people and low wages in Morocco (de Haas, 2007).

Immigration/Transit

Although emigration still dominates the picture, Morocco's importance as a country of transit and eventually of destination for migrants from sub-Saharan countries has gradually grown over the course of the past years. Besides being a sending State on the Western Mediterranean corridor to Europe, Morocco is a main transition hub for migrants on this route. Much of this migration is irregular with migrants crossing the Strait of Gibraltar or the Atlantic in so called *pateras* (small fishing boats) or trying to reach the Spanish enclaves of Ceuta and Melilla by climbing over the fence installed there. The crossing is dangerous; from January to October 2016 alone, 62 individuals died on this route (IOM, 2015).

Given the nature of irregular transit flows, statistics on how many people cross the country in order to reach Europe are rare. Nevertheless, an indicator of the high numbers of irregular transit is the fact that between 2000 and 2009, 136,603 individuals were apprehended at Morocco's borders (MPC, 2013:1). These migrants were predominantly male, had an average age of 27.7 years, and on average possessed a medium to high level of education (ibid.:2).

With the tightening of borders in Europe due to the ongoing migration crisis and political shifts in major European receiving countries, many migrants who attempted to reach Spain via Morocco have stayed in the country as a "second-best option" (de Haas, 2007). The growing number of these migrants has led to violent racist attacks and discrimination on the one hand, but also to a high activity of civil society protecting migrants rights on the other (GADEM, 2013; de Haas, 2014). These civil society

organizations had been denouncing public and institutional racism and lobbying for a new migration policy, which effectively was announced in 2013. As part of this new policy, the Government started its first regularization campaign ever. During the entire year of 2014, migrants with an irregular status in the country could regularize their situation (Bachelet, 2014). As of April 2015, 16,180 migrants were granted regular status, whereas 10,950 were rejected or still awaiting the results of their application (Norman, 2015:5).

The picture is different when it comes to regular immigration. In 2012, a total number of 77,798 foreign nationals had a valid residence permit in Morocco, proceeding mainly from France (22,689) and Algeria (10,424), as well as other African countries such as Senegal (2,889) or Mauritania (1,956) (MPC, 2013:1). Much of this immigration is labour immigration from mostly Southern Europe, which has surged after the onset of the Spanish economic crisis in 2008 (de Haas, 2014), but also a considerable and increasing amount of retirees from Northern Europe have settled in Morocco since the middle of the 1990s (Bilgili and Weyel, 2009). Further, temporary educational migration from countries, such as Mauritania, Senegal, Guinea-Bissau and Chad, amounts to up to 13,000 students per year (Altai Consulting, 2015:23).

Return migration

Return migration to Morocco has remained considerably low. In 1982, the Moroccan census identified 68,000 individuals as returnees. This number almost doubled to 151,197 in 1994 (Khachani, 2006:6). However, if one holds these numbers against the total of Moroccan citizens living abroad, return migration stays at a constant level of about 10 per cent. The largest share of returnees in 1994 came back from France (38.2%) but also a considerably high percentage of the group of returnees had come back from Algeria (22.4%).

Internal migration

As previously mentioned, urbanization is an increasing phenomenon in Morocco. Internal migration from rural areas to urban agglomerations, mainly on the coast, has characterized the country's population development for the past decades. The Government of Morocco pointed this out in both of its national communications to the United Nations Framework Convention on Climate Change (UNFCCC) and ascribed this

internal movement partially to the more intense and frequent phases of drought (Government of Morocco, 2001:9; 2010:25).

Pastoralist transhumanism is also spread in the south of Morocco. The nomads are an important part of the Moroccan economy; 25 to 30 per cent of Morocco's sheep and goats are kept in different mobile systems, ranging from nomadism to short-distance seasonal transhumance (Akasbi et al., 2012:1). However, a general trend from mobile pastoralism towards more sedentary and commercial forms of pastoralism has taken place in the last decades (Freier, Finckh and Schneider, 2014:918).

1.2.b. Displacement

Morocco's history is deeply entangled with the conflict around Western Sahara and the resulting (internal) displacement of the Sahrawi population. Refugee camps with hundreds of thousands of displaced Sahrawis continue to exist in Algeria close to the Moroccan border. However, within Morocco itself, the country does not host any internally displaced population (UNHCR, 2015a). However, some non-governmental organizations (NGOs) have started to denounce the current police practice of dropping off irregular migrants who try to enter the Spanish enclaves of Ceuta and Melilla as "forced displacement" (Keßler, 2014:1).

Disaster-induced displacement relocation and displacement

Displacement by natural disasters is an issue of concern in Morocco. Although numbers are not as high as in other States, the country has witnessed disasters displacing thousands in recent years. According to the Internal Displacement Monitoring Centre (IDMC), a total of 22,271 people were displaced due to disasters from 2008 to 2014. The latest in this series of disasters was the flooding in the south of the country that killed 32 people and forced the Moroccan Red Crescent to evacuate 1,690 persons in the provinces of Agadir-Ida-Ou Tanane and Guelmim in November 2014 (IDMC, 2015).

Development-induced relocation and displacement

Two types of development-induced displacement can be found in Morocco in recent years: (a) that of relocation with the aim of ameliorating the situation of the concerned population as part of overall development schemes; and (b) displacement due to development projects.

In the first category, we find relocations that are planned and carried out under the Initiative for Human Development. This initiative was inaugurated by King Mohammed VI in 2005 and aims to fight poverty and exclusion of disadvantaged populations. The *l'Initiative pour le Développement Humain* (INDH)-Inmae project runs under the framework of the initiative and aims at ameliorating the conditions of the population of people living in slums in the greater Casablanca area. Some 500,000 people are to be connected to basic sanitation, water and electricity services, whereas some 400,000 slum inhabitants (or 74,000 households) are selected to be relocated to “off-site social housing or land lots” (Lydec, 2009:13; 2015). According to some sources, the government interventions to reduce slum settlements were carried out forcefully and without warning in some cities, thus forcing the population into displacement (Land Times, 2012).

In the second category of development-induced displacement, the construction of the Nador Port and the building of the TGV train line are two current development projects in which relocations are foreseen.

The town of Nador is located in the Oriental Region in the east of the country, which is generally perceived to be less developed. The Nador West Med port seeks to contribute to the development of the region through the construction of a modern, large port area that, according to planning, should become a major Mediterranean port (ADBG, 2015:3). The project consists of two phases: (a) the port itself and an access road will be built; and (b) a larger service/industry area will be established. In the first phase, 20 landowners will lose their farmland and in the second phase, which involves a more spacious area, 174 agricultural plots will be expropriated (ibid.:10). However, although the Full Resettlement Action Plan of the project describes that the Nador West Med company “will support the resettlement of the so-called vulnerable populations of the project area and handle the specific case of people without land titles who have lived on the project right-of-way for generations” (ibid.:11), no relocations of the total of 741 persons affected are planned, as the land seems to be mostly non-inhabited farmland (ibid.:14). The only relocation that is to take place on the area is that of 100 fishermen whose fishing grounds and landing points have to be relocated (ibid.:10).

This is not the case with the construction of the Moroccan high-speed railway (TGV) line, which is planned to be operational in 2018. From its inception on, the project has stirred quite some discussion among Moroccan society; it is debated for its high costs and, according to its critics, offers questionable added value to Moroccan infrastructure (Fakim, 2011). Within the project planning, the expropriations of 528 homeowners was foreseen. A preliminary study on the impacts of the project from 2011 argued that “most of the buildings are in ruins and are uninhabited” (ONCF, 2011:194), and thus expropriation would not be a major problem. Contrary to this first assessment, protests of homeowners in 2013 and 2014 impacted the project development. In several sites to be expropriated (and possibly to be evicted), inhabitants staged vivid protest against the compensation they were to receive for their inhabited houses and, which, in their view, was far from fair (Amiar, 2014; Sabib, 2013).

I.2.c. Asylum

The Moroccan constitution in Article 30 grants the right to asylum, but makes it subject to national law. However, the asylum procedures in the country were long dormant. Only after massive protests of civil society pointed out the lack of protection, and the release of a report by the National Council of Human Rights (CNDH) that recommended among other things, to strengthen the right to asylum (CNDH, 2013), there was a shift in the country’s asylum policy. The *Bureau de Protection des Réfugiés et Apatrides* (Protection Office for Refugees and the Stateless) was reopened in 2013 (Bachelet, 2014) and in 2015, the Government was working with the Office of the United Nations High Commissioner for Refugees (UNHCR) in order to establish national asylum infrastructure, in the process of which also a new law on asylum is to be promulgated (UNHCR, 2015a).

The numbers of recognized refugees in Morocco has varied in recent years. From about 4,000 refugees in the year 2000, the country experienced a peak in 2006 with over 4,500 individuals seeking refuge in Morocco. Surprisingly, with the onset of the Arab Spring, these numbers fell again to under 2,000. In 2015, the UNHCR recorded 3,902 recognized refugees and a total of 1,565 asylum seekers in the country; the majority are Syrian nationals (UNHCR, 2016). Next to the Syrians, nationals of Yemen, the Democratic Republic of the Congo, Côte d’Ivoire,

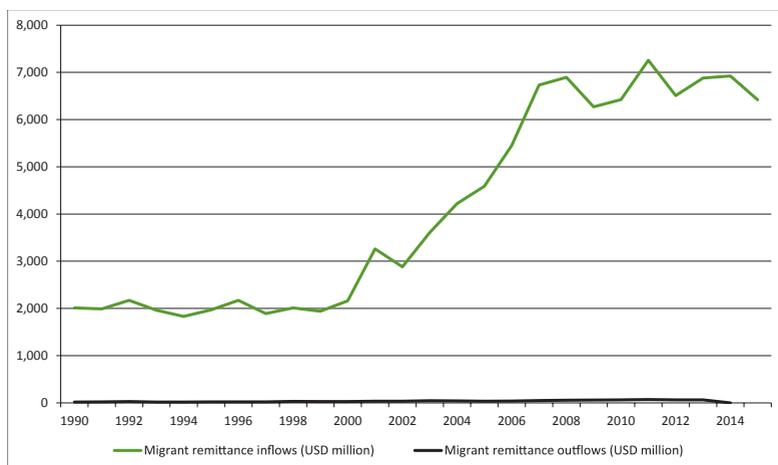
Mali, Cameroon and Nigeria form major groups of refugees and asylum seekers (Altai Consulting, 2015; UNHCR, 2016).

I.2.d. Role of remittances (internal and international)

International remittances to Morocco have been of major importance to the country's economy ever since the 1980s. The inflow of remittances grew heavily in the past decades, from USD 2,010 million in 1990 to an estimated USD 6,923 million in 2014. In 2014, international remittances made up 6.3 per cent of Morocco's overall gross domestic product (GDP) (World Bank, 2016c), showing how essential remittances are to the country's economic activity. Most remittances come from France, Spain and Italy (World Bank, 2014a), the centres of Moroccan emigration. It is important to note that official remittances are higher than development aid to Morocco (six times higher) and foreign direct investment to the country (three times higher) (World Bank, 2016a). Binding the (organized and individual) Moroccan diaspora closely to the State in order to foster this high level of remittances thereby remains a high priority for the Government of Morocco (Dadush, 2015).

Remittances from Morocco, on the other hand, are low in comparison. However, recently they are gaining importance; in the past 25 years, the total amount of money sent out of the country nearly quadrupled from USD 16 million in 1990 to USD 63 million in 2013 (World Bank, 2016c). This upsurge could reflect Morocco's change towards also being a country of transit and immigration described previously.

Figure 3: Remittances from and to Morocco, 1990–2014



Source: World Bank, 2016c.

Data on internal remittances is more difficult to collect. The World Bank, in its Global Financial Inclusion Database, offers data on the percentage of the population that receives domestic remittances. This data, however, is not available for Morocco (World Bank, 2016e). Research on the effects of domestic remittances is only available on regional case studies. These studies, however, argue that internal remittances have an important impact on household financing, yet do not reach the impact international remittances can have on the income structure (de Haas, 2006:570).

II

KEY CHALLENGES:

**THE MIGRATION,
ENVIRONMENT AND
CLIMATE CHANGE
NEXUS**

II. KEY CHALLENGES: THE MIGRATION, ENVIRONMENT AND CLIMATE CHANGE NEXUS

In a study on *Climate change, vulnerability and adaptation in North Africa* in 2012, Schilling et al. argue that among all countries in North Africa, “[c]limate change will likely have the strongest effect on Morocco”. Furthermore, “Morocco is highly vulnerable to the impact of climate change, particularly with regard to its water resources, and in coastal and desert regions” (Grant, 2011:10).

Thereby, the impacts climate change has and will have on Morocco are quite diverse; rise in mean annual temperature and reduced precipitation, leading to drought and desertification, are among the most quoted effects. But also extreme weather events, such as storms and flash flooding, are becoming more and more common. Earthquakes add up to the panorama of hazards that Morocco is increasingly suffering from.

Table 2: Major hazards in Morocco from 1970 to present

Event	Year	Deaths	Total population affected
Storm	2014		117,000
Floods	2014	47	
Flood	2010		75,000
Earthquake	2004	628	
Flood	2002	80	
Drought	1999		275,000
Flood	1996		60,000
Flood	1995		35,000
Flood	1995	730	

Event	Year	Deaths	Total population affected
Landslide	1982		12,216
Flood	1977		38,000
Drought	1971		137,000
Flood	1970		266,444

Sources: EM-DAT, 2015; World Bank, 2016d; Davies, 2014.

II.1. Sudden-onset events and their effects on migration patterns

II.1.a. Windstorms

The First National Communication of Morocco to the UNFCCC already mentions a projected “increase in the frequency and intensity of frontal and convective thunderstorms in the north and the west of the Atlas Mountains” (Government of Morocco, 2001a:10). Storms have indeed become more frequent in recent years, bringing with them flash flooding (see section 1.2 of this report). In 2014 alone, storms affected a total number of 117,000 individuals (EM-DAT, 2015).

II.1.b. Floods, including flash floods

In Morocco, the rainy season lasts from October to April. It often brings with it devastating floods. According to World Bank statistics, from 2002 to 2011, nine out of ten top natural disasters in the country were floods (World Bank, 2016d). It is difficult to predict these floods precisely, as the rains that cause them are often localized and massive. As an example, on 14 December 2014, Casablanca experienced 54 mm of rainfall in 24 hours.

However, these floods affect a great number of people. PreventionWeb assumes that about 25,000 people live in conditions of flood risk and are at danger, both of economic loss and losing their lives (ibid.). The year 2014 saw a total of 47 deaths by floods (Davies, 2014). Reports on how many people are displaced in urban settings by flooding are not available. As the flooding affect mostly underdeveloped, densely populated areas and slums within urban settings, the case of the aforementioned flood

in Casablanca may serve as an example; here, 3 slum houses collapsed, leaving as many as 14 families with dead relatives and homeless (ibid.). The floods temporarily displace a large number of people. In 2010, floods displaced a total of 6,000 families and their livestock throughout several administrative regions (IFRC, 2010).

II.1.c. Landslides

Although they do not occur often, Morocco's north-east is highly susceptible to landslides. Earthquake-related landslides are reported to have taken place; however, landslides occurring hand in hand with high precipitation are more common. The entire area north of Taza and west of El-Hoceima, which also is the zone of highest precipitation per annum, is at risk of landslides (World Bank, 2016d). A major landslide event that affected over 12,000 people was recorded in 1982 in El-Hoceima (ibid.).

II.1.d. Wildfires

Due to rising drought, as well as the ever growing human pressure on Moroccan woods, incidents of wildfire have been increasing in Morocco in recent years. In the year 2013, a total of 411 fires were recorded that impacted an area of 2,207 ha. No lives were lost and no people were displaced by the fires (JRC, 2014:72). However, the fires have a major economic impact that is estimated to lie at USD 1.8 million per year (World Bank, 2015d).

The Government seeks to lower the number of wildfires per year through the National Plan of Prevention and Fight against Forest Fires (*Plan Directeur de Prévention et de Lutte Contre les Incendies*, PDCI) (JRC, 2014:71).

II.1.e. Earthquakes

Morocco lies within an earthquake zone and experiences minor earthquakes occasionally. However, also major geological movements occur in Morocco. The worst earthquake to ever hit the country was recorded in 1960 in Agadir. It killed 12,000 people, injured 12,000 and made 35,000 people homeless (Morocco World News, 2015). The latest major event took place in 2004 near Al Hoceima, leaving as many as 628 dead (EM-DAT, 2015). In January 2016, seismic tremors struck the same region.

II.2. Slow-onset processes and their effects on migration patterns

II.2.a. Sea-level rise and coastal erosion

Morocco's urban agglomerations lie mostly at the coast, and 80 per cent of the country's urban population lives in coastal cities or towns. The Intergovernmental Panel on Climate Change (IPCC) expects the sea-level rise will affect Moroccan urban areas by 0.1 m by 2030, 0.17 m by 2050 and even higher levels over the next 50 years (Grant, 2011:10). This will most likely increase the cities' vulnerability to flooding and storm surges. Casablanca has already experienced urban flooding – sea-level rise and precipitation combined make the city's coastline especially vulnerable (see section 1.2 of this report); 40 to 50 km of coast around the city of Casablanca are said to be at direct risk of erosion (Grant, 2011:10).

Coastal erosion and vulnerability to sea-level rise is also aggravated by coastal sand mining, which takes place in massive mining operations mainly near Morocco's major coastal cities (Pilkey et al., 2007). The mining is carried out both legally through companies that hold State permits, as well as illegally, making the effects difficult to measure. Nevertheless, the operations have been described as "the world's largest" (ibid.), having a severe effect on coastal ecosystems and resilience. As the last academic publication on this issue dates from 2007, more recent studies on the intensity of the mining and its effect on vulnerability are needed. The problem itself, however, persists, as recent reporting by popular media has shown (de Viguerie, 2015).

II.2.b. Increasing temperature/Changing precipitation patterns

In recent decades, North Africa has experienced an overall warming. These observations, which hold especially true for Morocco, are ascribed by the IPCC to climate change (IPCC, 2014:7). The trend is expected to continue: the medium temperature in Morocco is expected to rise by about 1.1°C to 3.5°C by 2060. The warming will however not occur at the same pace in all regions of the country. The increase in the interior regions is expected to be faster than that on the coast (World Bank, 2016d).

At the same time, precipitation is expected to decrease in North Africa by 2050 by about 10–20 per cent (Schilling et al., 2012:1), other studies

talk of up to 30 per cent in certain regions (Schilling et al., 2012:5). From the mid-1970s onwards, the mean annual rainfall in Morocco has started to decrease, yielding precipitation below average in many years. The change in precipitation patterns also brings about a higher chance of extreme weather events for the entire North African region, leading for instance to flash floods (Schilling et al., 2012:7).

Drought and water scarcity

The overall warming, the changes in precipitation and industrial agriculture pressure patterns lead to an increase in water scarcity and drought. According to the World Bank, drought is number one on the list of natural disasters in terms of the number of people affected and in terms of the economic losses Morocco experiences (World Bank, 2016d). “Drought frequency and intensity have increased in recent decades and are projected to worsen with climate change” (ibid.).

The Atlas Mountains play an important role in this development; the Oum Er Rbia river basin, which contains half of the country’s public irrigated agriculture, has experienced extended meteorological droughts that led to severely reduced water availability. In the past decade alone, the amount of rainfall was so much lower than predicted that the irrigation water available was only half of the designed volume. This leads to the pumping of groundwater for irrigation, mostly by industrial agriculture. The aquifers are thereby overused and cannot regenerate (Houdret, 2013). This situation, which is similar in several regions of the country, is in part due to the lack of effective water regulation. Water policy, both at national and local levels, has not developed the instruments necessary to halt this development and prevent water degradation. Already in 2012, the World Bank estimated that the damage caused to the Moroccan economy by degraded water resources was at 1 per cent of the GDP. A paradigmatic change in water and agricultural policy, setting up clear limits to water use and establishing sustainable distribution mechanisms, is therefore needed (ibid.). The World Bank is supporting the Government of Morocco on a project that is supposed to “make irrigation in the basin more sustainable, more profitable, and more resilient to climate change” (World Bank, 2015), by a mixture of government spending on publicly available water, sanctions for excessive use of water resources, promotion of private investment in the region and help for farmers in marketing.

The effects of climate change in the Atlas Mountains also have implications for the lowlands; the reduced snowpack there leads to more rapid springtime melting and an overall reduction in the available seasonal water resources in the lowland areas of Morocco (IPCC, 2014).

II.2.c. Salinization

According to the IPCC's projections, Morocco's groundwater reservoirs are expected to undergo a salinization process. This is due to the increased pumping of groundwater, which leads to saltwater intrusion. This process is expected to increase in line with the intensification of irrigated agriculture. The IPCC also assumes that this form of agriculture will become less profitable in the course of time due to the salinization of groundwater reservoirs (ibid.:19). This holds especially true for the Oum Er Rbia watershed (World Bank, 2015), the oasis region in southern Morocco (Adaptation Fund, 2015:9) and the Souss plain (Houdret, 2008).

In Morocco, an overall of 35 per cent of irrigated agricultural areas are considered to be saline; in the southern province of Ouarzazate, this figure rises to even 80 per cent, with 45 per cent being at a critical level (Schilling et al., 2012:20).

II.2.d. Desertification

A major difficulty in Morocco is the desertification of oasis in the southern part of the country. This zone is home to 1.733 million inhabitants (5.3% of the national population according to an estimate in 2002), who reside on an area of 115,563 km², which makes up 15 per cent of the national land area. In the past couple of years, a dozen oases have already lost more than 40 per cent of their crop area. In the Errachidia area, 208 ha of agricultural land were silted (Adaptation Fund, 2015).

The degradation of oasis lands is ascribed to two factors: (a) climate change; and (b) rapidly growing population. Whereas the former is predicted to bring the oases more drought and extreme weather conditions, thereby making traditional methods of agriculture more difficult, the extreme increase in population further strains the agricultural land through overuse, but also due to a rapid urbanization (ibid.). Agricultural productivity in the oases region is predicted to be 17–30 per cent less than the average of the period 1972–2000, although

groundwater consumption is expected to be double (Schilling et al., 2012:30).

From 2009 to 2012, the Adaptation to Climatic Change in Morocco for Resilient Oasis (PACC/Oasis) project, implemented by UNDP and different ministries, in order to “manage and reduce the risks posed by climate change in production systems of Morocco’s oasis through the introduction of innovative adaptation approaches and by strengthening local capacities” (WFO, 2013). The project developed climatic scenarios for the oasis zones for the time horizon of 2021–2050, carried out a vulnerability assessment (increasing water need, decreasing yields, population growth and new housing needs), installed a warning system, established automatic climate stations, developed planning tools for different communities and oasis and established pilot sites (ibid.).

A second project funded by the Adaptation Fund is approved and about to be carried out. The “Climate changes adaptation project in oasis zones – PACC-ZO” aims at the reduction of vulnerabilities of people and the agricultural/ecosystems of the oases by “increasing the adaptive capacity of local actors, increasing the resilience of the target ecosystem and by disseminating knowledge management” (Adaptation Fund, 2015). The project will improve the management of soil and water resources and introduce resistant palm tree varieties. It will also comprise trainings for various stakeholders (ibid.).

II.2.e. Land and forest degradation

In Morocco, the tree density is decreasing. The IPCC argues that this is taking place in the western Sahel zone and the semi-arid parts of Morocco faster than it would under normal conditions due to climate change (IPCC, 2014:34).

II.2.f. Declining soil fertility

Schilling et al. (2012:23) argue that already 75 per cent of Morocco’s arable land is affected by soil erosion. This erosion has to do with changing precipitation patterns, but it is also highly dependent upon land use (agriculture, livestock grazing and so on). As mentioned before, salinization also poses a great threat to the fertility of Moroccan agricultural soils. In Morocco, irrigated soils can suffer a loss of more than 50 per cent in productivity in the course of 20 years due to salinization (Schilling et al., 2012:24).

II.3. Vulnerability mapping

As the afore-described slow- and sudden-onset processes and events show, Morocco is highly vulnerable to the effects of climate change. Both ecosystems and the population are affected in various ways. Vulnerability is different in the country's various regions, both in type and in magnitude. In cooperation with the World Bank, the Government is therefore developing a climate vulnerability index for the country's regions (World Bank, 2013:9).

II.3.a. Geographically

Coast / Coastal Cities

Over 80 per cent of the country's urban population live in coastal urban agglomerations (especially Rabat and Casablanca). These populations are especially vulnerable to sea-level rise and changes in precipitation patterns leading to flash floods, as well as more and intense storms (Grant, 2011:10). As pointed out before, it is mostly the non-well-off part of the population inhabiting informal settlements and makeshift housing that is exposed to higher vulnerability.

Especially Rabat and Casablanca will be affected by sea-level rise, coastal erosion and flash flooding. Storm surges, although not happening frequently now, are also expected to rise. The World Bank points out that urban flooding is the "highest economic risk to the two cities from weather related events" (ibid.). The costs of these events related to changing climate are projected to lie at USD 150 million per year in 2030.

Oasis

As outlined above, inhabitants of the oasis region in the south of the country are also exposed to a higher vulnerability due to increased desertification of the arable land, higher population pressure and a related, expected drop in agricultural productivity of the arable land in this region. Related to the oases are also the nomadic pastoralists who likewise live in the south of the country. Reduced soil fertility and less availability of grazing lands due to increased irrigation agriculture pose a higher risk for the traditional nomadic pastoralists.

II.3.b. Types of livelihood affected (and co-stressors)

Agriculture

Morocco's economy is heavily based on agriculture. The change of rainfall and weather patterns, as well as the increase in droughts and the salinization of soil due to increased irrigation agriculture, therefore have an enormous impact on the economy as a whole. However, how exactly this link works was only fully uncovered by a World Bank study in 2013. The research yielded the result that "[c]limate change would intervene by substantially changing the regional production patterns and hence, introduces changes in prices of commodities" (World Bank, 2013:8).

Fishery

Fishing in Morocco seems to be managed in a rather sustainable way, which according to the World Bank is an exception in the MENA region. The level of fishing is said to be relatively controlled and takes place both in an industrialized, as well as an artisanal manner (World Bank, 2013:10). Climate change has an effect on fishery as old species are disappearing and new ones appearing in the fishing grounds off the Moroccan coast. A study carried out by the Government as part of the "Plan Halieutis", which aims at boosting the Moroccan fishery in a sustainable manner, underlined the importance of a well-managed and controlled fishery that incorporates in its planning these changes related to climate change (ibid.).

Nomad pastoralism

In line with the expected higher vulnerability of the population of the oases in southern Morocco, one would expect that mobile pastoralists will be at a higher risk of being impacted by climate change and opt for settlement, which would then further stress irrigation agriculture in the south. However, contrary to this view held for a longer time by literature (Schilling et al., 2012:30), recent studies have revealed that transhuman pastoralism in the south of Morocco is by far less vulnerable to changing precipitation patterns and more frequent droughts than sedentary pastoralism. Freier, Finckh and Schneider (2014:936) even suggest stopping the current trend to settle nomadic pastoralists, as this would increase vulnerability and opt rather for new forms of transhuman pastoralism (such as through far distance trucks) as a means of adaptation to a changing climate.

II.3.c. Internal migration and displacement dynamics due to environmental factors

Both national communications indicate that internal migration could partially be due to the more intense and frequent phases of drought (Government of Morocco, 2001a:9; 2010:25). Resulting urbanization would put further stress on cities and raise their exposure to vulnerability. However, no research on internal environmentally induced migration has been carried out so far.

II.3.d. Cross-border movements

There is no research on how many people have moved out of Morocco due to environmental change. However, seeing that emigration from Morocco is still high, especially from the rural areas, where drought is increasingly making agricultural production more difficult, one could argue that emigration is an adaptation strategy. Some literature suggests this correlation between emigration and a drop of agricultural productivity due to climate change (Schilling et al., 2012:30; Sow, Marmer and Scheffran, 2015:6). Nevertheless, there is no evidence on this link, and further research needs to be carried out.

Also, on the other side of the migration nexus, literature on immigration to Morocco scarcely mentions climate change as a reason for moving into the country. Sow, Marmer and Scheffran, for example, mention West African fishermen who have come to Morocco “because of resource depletion in their origin countries due to climate variability and overfishing” (Sow, Marmer and Scheffran, 2015:1). Within the current situation in Morocco, this community is exposed to greater vulnerability, as the receiving society is mostly negative towards their presence in the country, a situation that yields difficult economic opportunities (*ibid.*). Apart from this, however, the situation of environmental immigrants in Morocco and their exposure to vulnerability has not been studied systematically.

II.4. Potential effects of (environmental) migration on vulnerability

Due to the previously mentioned lack of studies on environmental migration to and from Morocco, the following section can only be hypothetical.

II.4.a. Environmental degradation

No evidence is available on the connection between environmental migration and further environmental degradation.

II.4.b. Human security

In terms of the West African fishermen who can be defined as environmental migrants, the migration process did put them into a situation in which human security was not guaranteed. The xenophobic and racist situation in big parts of the population that was acted out by the harsh methods of the Moroccan police forces can be seen as quite the contrary of a safeguarded human security (see Sow et al., 2015). The changes in migration policy and the clear statement of the king as chief policymaker in favour of protecting migrants (below) will most likely ameliorate this situation.

II.4.c. Urbanization

As mentioned before, both national communications suggest that rural-to-urban migration is a consequence of changing climate (Government of Morocco, 2001:9; 2010:25). As was also pointed out above, the high pace of urbanization in recent decades led to slums in the bigger cities (mainly Casablanca and Rabat) that are particularly vulnerable to the effects of climate change. It would be reasonable to suggest that some of those migrating to the cities in recent decades for environmental reasons are now those finding themselves in new situations of vulnerability to climate change. Research needs to be carried out in order to verify this.

II.4.d. Migration flows

No evidence is available on how environmental migration has had an impact on further migration flows. If one assumes that some of the Moroccan emigration of recent years has been climate-induced migration as some literature suggest (above), it is plausible that this migration took

place within established migration networks to traditional countries of emigration. Moroccan environmental emigrants would thus be in a good position (in comparison to emigrants from other countries) as emigration channels, information and reception at the place of destination are all well established.

Concerning the current immigration flows, it is highly likely that West African immigrants rely on information of those already in the country, too. As these migrants often find themselves in situations of vulnerability already (Sow, Marmer and Scheffran, 2015), it would be highly likely that the newcomers will be settling in similar conditions. The same reasoning would apply to internal migration towards the coastal cities as outlined just previously.

III



TOOLKIT FOR
POLICYMAKERS

III. TOOLKIT FOR POLICYMAKERS

III.1. Existing policy framework and policies in the process of being elaborated

III.1.a. Emigration policy

Emigration has been encouraged by subsequent Moroccan governments ever since the signing of labour migration contracts with several European receiving nations in the 1960s. In the early stages of Moroccan emigration, the Government tried to keep a close eye on its diaspora population. However, since the 1990s, the State has liberalized its emigration policy in order to embrace the positive contributions of the country's diaspora.

In 1990, the Ministry in Charge of Moroccans Living Abroad and Migration Affairs was founded, which was supplemented by the creation of the *Fondation Hassan II pour les Marocains Résidant à l'Étranger*, a foundation that supports the diaspora and its organizations. Further focus on the diasporic communities has led to the creation of the *Conseil Supérieur de la Communauté Marocaine à l'Étranger* (CSCME) in 2007. This High Council of the Moroccan Community Abroad advises the Government on issues concerning the diaspora; its members are members of the diaspora (de Haas, 2009:6–7).

III.1.b. Immigration policy

In 2013, Morocco initiated a major reform of its immigration legislation, advocated for by King Mohammed VI himself. Two draft laws on immigration and trafficking replace a law from 2003 that was seen by many as extremely harsh (Natter, 2013). A third draft law on asylum is part of the reform package by which the government takes over responsibility from the UNHCR, whose mandate in the country it had formally accepted in 2007. Further, the reform includes a regularization process for migrants living in the country in an irregular status (Norman, 2015). This regularization process took place throughout the year 2014 (ibid.:5).

Just a few months before the initiation of the reform, a mobility partnership was signed between Morocco and nine European Union Member States in June 2013 with the objective of managing migration more efficiently. It is not legally binding, but rather a road map to develop the common management of migration further. It entails the facilitation of visas for Moroccan students and highly skilled immigrants. On the other hand, Morocco accepts to facilitate the readmission of unauthorized migrants (EMHRN, 2014).

This fast move forward on migration policy issues is welcomed by some civil society organizations but denounced as window-dressing by others. The latter argue that among the underlying motives to launch the migration reform were not an interest in migrant well-being per se, but rather Morocco's fear of being denounced by NGOs on an international stage, the country's geostrategic interests in sub-Saharan Africa and the mobility partnership with the European Union (Norman, 2015:4–6). But however, the current changes are being perceived, they do seem a clear break and “unprecedented for a non-traditional receiving state” (ibid.:6).

As the majority of countries, Morocco has not introduced references to the environment nor climate change in its emigration nor its immigration policies.

III.1.c. Poverty reduction

Poverty reduction has been a primary aim of subsequent national development plans. From 2005–2010, the National Initiative for Human Development set out to combat poverty and social exclusion in four target areas:

- Fighting rural poverty: This component targeted 403 rural communes with a poverty rate above 30 per cent.
- Fighting social exclusion in urban areas: This component was directed at 264 neighbourhoods within large cities of over 100,000 inhabitants.
- Fighting precariousness: This component reached out to social groups in precarious situations, such as homeless youth, street children, the elderly and the poor.
- A transversal project programme, open for application (Government of Morocco, 2014b).

The current, second phase of the initiative (2011–2015) is characterized by a higher budget (17 billion dirhams (DH)), a higher target in terms of the communities targeted (702 rural communes and 532 urban neighbourhoods) and the addition of a fifth pillar on “territorial up-scaling”. This new pillar is dedicated to the reduction of poverty within mountainous and other enclave-like communities. According to the initiative, the pillar, which counts with DH 5 billion of financing, will directly benefit 1 million persons, mostly through infrastructural measures, education and sanitation (Government of Morocco, 2014b).

The initiative does not explicitly draw connections between the environment or climate change and poverty reduction.

III.1.d. Urbanization

After a slope in urban growth rates in the 2000s, urbanization in Morocco is accelerating. About 60.2 per cent of the Moroccan population already lives in urban settings (World Bank, 2016a). Current urbanization is ascribed to urban population growth, as well as immigration from rural areas (Land Times, 2012). A considerable part of this population lives in informal settlements or slums. Thus, managing urbanization is a priority policy area for the Government of Morocco.

Ameliorating the situation of the slums was partly addressed by a sub-project of the Initiative for Human Development, described previously. The INDH-Inmae project aims at ameliorating the conditions of the population of people living in slums in the greater Casablanca area through upscaling of infrastructure, sanitation and electricity, as well as relocation (see chapter 2.2 of this report).

The draft Climate Change Policy of 2014 (below) states that the Ministry of Urban Development and National Spatial Planning (*Ministère de l’Urbanisme et de l’Aménagement du Territoire National* (MUATN)) is working on integrating climate change adaptation into its various policies and guidelines. The draft *Code de l’Urbanisme* is mentioned explicitly there as an example of integrating climate change issues into policymaking on urban and urbanization issues (Government of Morocco, 2014a:33).

III.1.e. Climate change/Climate change adaptation

International and domestic legal framework

Ever since Morocco ratified the UNFCCC in 1995, it has been keen to position itself as a player on the global climate diplomacy scene. The country hosted the UNFCCC Conference of Parties (COP) 7 in 2001 and will host COP22 in November 2016. The development of Morocco's domestic climate change policy has been going hand in hand with the country's integration into the international dialogue on climate change.

Table 3: Milestones in Morocco's Climate Policy

Year	Event/Legislation
1995	Ratification of the Framework Convention on Climate Change
2001	Submission of the first National Communication to the UNFCCC
2002	Ratification of the Kyoto Protocol
2002	Establishment of the Clean Development Mechanism
2009	Issuance of a National Plan against Global Warming (PNRC)
2010	Submission of the Second National Communication to the UNFCCC
2012	National Charter for Environment and Sustainable Development
2014	Framework Law 99-12 on the National Charter for the Environment and Sustainable Development (operationalizing law)
2015	Intended Nationally Determined Contribution (INDC) to the UNFCCC (Third National Communication)

Sources: ClimaSouth, 2015a; Nachmany et al., 2015.

The development of national climate change policies started in 2001 with the establishment of the National Committee for Climate Change. The committee, which has the main task of drafting national communications to the UNFCCC, is headed by the Department for the Environment (which at the same time is the national focal point for the UNFCCC), and includes representatives of other ministries involved (Nachmany et al., 2015:3). In 2002, the country set up its Clean Development Mechanism (CDM), with currently 40 projects and programmes (ibid.).

During COP15 in 2009, Morocco presented a national National Plan against Global Warming (*Plan national contre le réchauffement climatique* or PNRC). The plan is supposed to foster the development of renewable energy sources and further the investment in energy efficiency, as well as evaluate the climate change vulnerability and adaptation to its impacts (Government of Morocco, 2009; ClimaSouth, 2015a).

Next to a general overview of the situation of climate change in the country, the plan entails the country's strategies on mitigation, adaptation and transverse measures. It comprises the commitments of all ministries that in their work touch upon one of these fields (such as the Ministry of Interior, Ministry of Industry and Commerce, Ministry of Economy and Finance, Ministry of Housing, Urbanism and Spatial Planning, Ministry of Agriculture and Maritime Fishing, Ministry of Health and of course, the Department of the Environment within the Ministry of Energy, Mines, Water and the Environment).

The plan contains a range of government actions on mitigation and adaptation among which figure prominently the development of adaptation capacities in the fields of agriculture, coastal areas and water scarcity. The measures include:

- (a) *Agriculture*: adaptation capacity-building for rural populations; creation of a national forecast system of agricultural production; introducing new agricultural practices, resistant crops and innovative planting techniques; optimizing irrigation; training of farmers in sustainable farming; introduction of consumption-based water pricing.
- (b) *Coastal areas*: implementation of integrated coastal zone management; construction of dykes to combat rising sea levels.
- (c) *Water scarcity*: public awareness-raising campaigns on water scarcity and use; revision of the pricing system and installation of meters at household level; investments in water saving and recycling methods, as well as in the construction of new dams and the drilling of deeper wells (Nachmany et al., 2015:6).

Within the plan, no general references to environmental migration are made. However, in the section on "housing and urbanism", relocation appears: the Ministry of Housing, Urbanism and Spatial Planning is there, designated to be in charge of the "[i]mplementation of programs

to relocate people whose homes are located in major hazard sites and threatened by floods” (Government of Morocco, 2015:29). No reference is made, however, as to which areas will be targeted and what magnitude these relocations will have.

The “Plan Maroc Vert” focusing on agriculture and other sectoral approaches add up to the plan, which at present is being revised and updated (Nachmany et al., 2015:4).

Although mentioned as part of the PNRC, climate change mitigation is still in the process of being institutionally established in Morocco. Currently, the German development agency GIZ is implementing a project in Rabat that aims at setting up a Climate Competence Centre for Mitigation and Adaptation. The centre creates knowledge, trains experts, brings together stakeholders and supports international and regional climate change dialogue (GIZ, n.d.).

Climate change is being mainstreamed in several other national policies.¹ The National Charter for Sustainable Development (*Charte Nationale de l'Environnement et de Développement Durable*, CNEDD) from 2012 is implemented through Framework Law 99-12 which not only explicitly mentions climate change, but “calls for strengthening national capacities to promote adaptation to climate change” (Nachmany et al., 2015:7).

In its Intended Nationally Determined Contribution (INDC) to the UNFCCC in 2015, which is closely linked to the CNEDD, Morocco sets the goal of making “its territory and civilization more resilient to climate change while ensuring a rapid transition to a low-carbon economy” (Government of Morocco, 2015). Next to a reduction of its greenhouse gas emissions by 32 per cent by 2030, the Government states that it has already devoted a considerable part of the national investment expenditures to climate change adaptation (9% over the period of 2005–2010). It expects this share to rise to at least 15 per cent in the coming years.

Further, a comprehensive climate change policy is in the course of being developed at the moment. It has its origins in a consultative process that was guided by the World Bank at the request of the Government of Morocco in 2009. In a paper on the consultations and further research

1 For a list of those policies, see Government of Morocco, 2015.

in 2013, the lack of an “overarching legal and legislative framework” is criticized, as this could “permanently hinder the effectiveness of such [climate change] policies and the creation of new ones by preventing their convergence and overall coherence” (World Bank, 2013:7).

The draft climate change policy of 2014 is a step towards this consolidation and coherence. Many of the recommendations based on the consultation have been integrated.

The policy will unfold along six strategic axes:

- (a) Strengthening the legal and institutional framework;
- (b) Improving knowledge and observation;
- (c) Strengthening of territorial convergence and adaptation of national objectives to local contexts;
- (d) Prevention and reduction of climate risks;
- (e) Awareness, empowerment of stakeholders and capacity-building;
and
- (f) Promoting research, innovation and technology transfer
(Government of Morocco, 2014a).

The policy is intended as a “flexible and dynamic instrument” that will, together with a tool for evaluation allow for refinement and an adaptation of the policy to research findings over time (ibid.). It explicitly addresses climate change as a push factor for immigrants from sub-Saharan Africa. This environmental (im-)migration is felt to have an impact on the vulnerabilities of Morocco itself (ibid.:6, 17) – how immigration changes vulnerabilities is not explained. It is indicative, however, that the draft policy entails quotes from a King’s speech held in November 2013 in which Mohammed VI strongly emphasizes the regularization and integration of those migrants (ibid.:5).

Migration of Moroccans does not yet figure prominently within Morocco’s climate change policies. It is referenced in a leaflet on the climate strategy published by the Ministry of Environment references. In this document (published without year, but most probably recently) a “growing mobility of populations” is mentioned

as a direct result of climate change (Government of Morocco, n.d.:25). This acknowledgement is, however, not picked up again as a difficulty adaptation measures have to respond to.

Institutional framework

Currently, the climate change portfolio is managed by the Division of Climate Change, Biodiversity and Green Economy within the Ministry of Environment. The department heads the aforementioned National Committee for Climate Change, comprised of representatives of various departments and other national institutions, which is the national channel for Morocco's communication towards the UNFCCC. Further, the National Scientific and Technical Committee, established in 2001, advises the Government on climate change issues. The committee is made up of experts in the field and functions as a national equivalent to the IPCC (ClimaSouth, 2015b).

In line with the foundation of the CDM in 2002, a Designated National Authority (DNA) for the Clean Development Mechanism was created in September 2002. The DNA's responsibilities are twofold; it regulates through establishing rules and procedures, which CDM projects are approved, and on the other hand, it builds capacity and markets Morocco's CDM potential (ClimaSouth, 2015b).

Another important stakeholder within the ministerial bureaucracy is the High Commission for Water, Forests and Desertification Control (*Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification*).

III.2. Policy options and research priorities: Some initial suggestions

As previously pointed out, there is a lack of sound empirical evidence on environmental migration in the case of Morocco. Apart from a few case studies, it is as of now not known how many people can be considered environmental migrants also due to methodological issues,² where they move from, where they move to and if they consider their stay to be temporal or permanent. Also, the effects of this movement on

² Since migration is multi-causal, it is difficult to distinguish the environment as the most important driver of migration, except in cases of disasters. For an introduction to the debates on definitions and methodologies, see Stojanov et al. (2014).

vulnerability of the receiving populations and the migrants themselves are not yet understood.

Therefore, in order to develop an evidence-based policy on migration, environment and climate change, a first step will have to be to create empirical evidence on environmental migration in Morocco.

As previously pointed out, displacement in relation to climatic events is mentioned within Morocco's climate change policies, but hitherto only as a remark. Relocation policies and programmes need to be further developed. Most probably, though, this would involve not only national stakeholders, but also regional entities, as the problems the different regions of the country are facing with regard to climate change differ strongly.

For the coastal cities, the INDH-Inmae project, part of the Initiative for Human Development, might serve as a good practice; further research on the outcome of the project would have to be considered. What policy measures would need to be put in place in the oases and the Atlas region, would depend on the empirical evidence on environmental migration – or, alternatively, on the perception of local policymakers.

IV

CONCLUSION



IV. CONCLUSION

Within the region of North Africa, Morocco is probably the country most vulnerable to climate change. Both slow-onset processes, such as desertification, sea-level rise and salinization, as well as sudden-onset events, such as floods and storms are expected to be more common in the coming years and decades, affecting more and more people in all parts of the country. Temporal displacement due to singular events will continue to be an issue, environmental migration due to slow-onset processes will also need to be addressed (although scope and magnitude are yet unclear). The country's seismic activity further enlarges the risk of environmentally induced displacement.

Notwithstanding these challenges, the policies previously listed in the areas of environment, climate change, poverty reduction, urbanization, among others do not or only very briefly mention environmental migration. Environmental migration will need to be introduced into these policies as a cross-cutting issue, as reliable empiric evidence on the magnitude of migration, displacement and planned relocation to, within and from Morocco due to environmental and climate change becomes available.

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ASSESSING THE EVIDENCE:

MIGRATION, ENVIRONMENT
AND CLIMATE CHANGE IN

MOROCCO



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