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# Migration and Environmental Change in Morocco

## In search for Linkages Between Migration Aspirations and (Perceived) Environmental Changes

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*This book is dedicated to Dr Christiane Timmerman who passed away during the writing process of this book. She was the founder and driving force behind the Centre for Migration and Intercultural Studies at the University of Antwerp and among the first who put migration on the research agenda in Belgium and abroad. Her previous work on migration aspirations and cultures of migration and her insightful comments on the preliminary outline of this book have largely contributed to the empirical insights presented in its pages.*

# Preface

This book is based on the insights derived from the MIGRADAPT project. For this project, I conducted qualitative research in Tinghir and Tangier (Morocco). This fieldwork, which is described in Chap. 4, provided the main empirical evidence for the book and resulted in the writing of Chaps. 5, 6 and 7. I was also very happy to have the support of Loubna Ou-Salah in the writing of Chap. 3 on environmental changes and migration patterns in Morocco over the last decades. As part of the MIGRADAPT project and main rationale of the book, I also invited Elodie Hut and Caroline Zickgraf to write a chapter on how environmental changes, migration causality and transnational practices were linked for Moroccan migrants living in Belgium (Chap. 8). In the introduction chapter (Chap. 1), the theoretical framework (Chap. 2) and the concluding chapter (Chap. 9), I aim to frame and connect the empirical findings with existing theories and demonstrate how these findings add to the existing literature and further our insights in both migration studies and, especially, research on environmental migration.

Antwerp, Belgium — Lore Van Praag

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# Chapter 1
# Introduction


This book aims to demonstrate the complex interplay between environmental change and the development of migration aspirations and trajectories in the Moroccan context. Its objective is to show how environmental changes have resulted in the development of migration aspirations and have caused people to migrate over the last decades and, at an accelerating speed, continue to do so. Migration has been of all times and spaces, and people have migrated, both voluntarily and involuntarily, for environmental, economic, political, humanitarian, social, and cultural reasons (Castles et al. 2014). However, recently, environmental changes seem to have put other migration reasons increasingly under pressure (Massey 1990; Massey et al. 1998; Bates 2002; Carling 2002, 2014; De Haas 2010a, b; McLeman and Gemenne 2018b). More particularly, the increasing rate and altering nature of environmental changes add urgency to already existing factors encouraging migration (Evans 2009; TGOFS 2011; IPCC 2014) and even trigger new migratory movements (Gemenne and Blocher 2016).

In order to demonstrate how environmental change and migration issues are intertwined with each other and entangled with socio-economic issues, considerations, policies, and discourses, this book focuses on how environmental changes contribute to migration aspirations and trajectories in the Moroccan context and how this is related to migrant communities in Belgium. Special attention is given to the ways in which environmental change gives rise to how migration aspirations are developed in regions that are characterised by migration and how migration aspirations are perceived by migrants themselves after migrating. To do so, the book focuses on the linkage between Belgium and Morocco, given the extensive ties between these countries that have developed through migration over the last decades. This book results from a larger research project, namely the MIGRADAPT project, that examines how migration could work for adaptation towards environmental/climate change with respect to migration in Belgium. Given the relatively large numbers of migrants coming from Morocco, Senegal, and DR Congo and the environmental changes there, these three countries were selected as fields of research in order to better understand and compare how environmental migration is perceived



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and how this impacts the developed adaptation strategies of people living in these regions of origin. In this book, we focus solely on the Moroccan context; adaptation strategies to deal with environmental change are studied from a transnational perspective in which diaspora and migrant communities coming from Morocco but living in Belgium are studied and asked about their views on environmental change in the region of origin as well as how they have framed their own migration aspirations and decisions. These findings are compared to how potential migrants and people living in Morocco approach environmental change, are resilient towards it, and deal with these changes in their daily lives. More specifically, the development of migration aspirations of people living in two regions in Morocco, Tangier and Tinghir, and how these changes are perceived and explained comprise the central part of this book. This linkage between migrant communities and regions of origin is innovative as it fully captures all aspects related to these migration dynamics in the Moroccan context.

Over the course of the MIGRADAPT project, when conducting ethnographic fieldwork, it quickly became clear that there is no one-on-one relationship in terms of region of origin between the migrants who recently migrated to Belgium and those migrating or looking for better opportunities in the selected areas in Morocco facing environmental change. Although this was partly shaped by specific migration policies after the second world war, this is also an important empirical finding which is in line with main trends in environmental migration (cf. Castles et al. 2014). Those who are in most need to migrate due to environmental changes are not always able or often do travel large distances, certainly not outside Morocco.

Although environmental factors have certainly contributed to the interest of seeking work abroad, the Moroccan fieldwork also indicated that the distances people undertake when migrating due to environmental migration should not always be overestimated. Social inequalities that lie at the basis of people's vulnerabilities towards environmental change are the same as those limiting the potential to undertake far away migration journeys on an individual basis. This differs from migration to Belgium due to established migrant networks as a result of organised labour market migration in the past and procedures of family reunification. This also shows that the framing of people's migration aspirations and trajectories are often very dependent on the available legal frameworks and urgent necessities in life – such as work. Thus, before setting out the empirical findings, a broader theoretical framework on environmental migration will first be provided in the following chapters.

## 1.1 Environmental Migration

The topic of environmental migration is at this moment very much alive and kicking as both academics and policymakers have become increasingly aware of the fact that the climate changes happening at unprecedented rates are severely affecting the lives and livelihoods of millions of people across the globe (IPCC 2014). Both human

migration and environmental/climate change are themes that have inspired many non-governmental organisations, educational institutions, and politicians from both right- and left-wing parties across the globe to undertake actions or to justify statements and policies. This also has led to the emergence of a discussion on the shaping of new categories of 'environmental/climate migrants/refugees' (Farbotko 2010; Farbotko and Lazrus 2012; McNamara and Gibson 2009) and the need for global and regional policies to better protect this vulnerable group against the disruptive effects of climate change on daily life (cf. Havard 2007; Stavropoulou 2008; Biermann and Boas 2008; IOM 2011; Zetter 2011, 2017). Due to the intensifying interest in these themes, academic, policy, and popular discourses have demonstrated that the linkages between both environmental/climate change and migration have been portrayed in a very linear and simplistic manner and have not been sufficiently based on empirical findings, and particularly on qualitative research. Inadequately informed consideration of the interactions between migration and environmental change could do even more damage to the natural environment or result in the formulation of policies that harm the targeted groups or regions or insufficiently protect the affected or vulnerable groups living in these regions and societies. For instance, the media frequently uses images of disappearing islands and depicts the mass movement of millions of people when discussing 'climate change refugees' (Biermann and Boas 2008; Farbotko and Lazrus 2012; Farbotko 2010; Ayeb-Karlsson et al. 2018). This leads to calls for immediate action, neglecting other crucial patterns of environmental displacement and migration, such as drought-related human mobility (and immobility) for instance.

The ongoing and very animated discourses and depictions of climate refugees portray climate change as a phenomenon that will happen in the future. These discourses ignore the fact that environmental changes have already been ongoing for years but are now occurring at a much higher speed (IPCC 2014). Consequently, by focusing solely on the migration trajectories of people confronted with disastrous or abrupt environmental changes, less attention is given to other important issues that give a far more comprehensive view on environmental migration. These issues may include the perceived links between one's difficulties and environmental change; climate change discourses in a particular area; the differential impact of environmental change on the population living in a particular area (McLeman et al. 2016); the political and social context; remittances specifically used to deal with climate change adaptation (Black et al. 2011; Babagaliyeva et al. 2017; TGOFS 2011); the voluntary nature of migration (cf. Bates 2002), internal migration and displacement (McLeman and Gemenne 2018a); and 'trapped' or 'immobile' populations (Zickgraf 2018; Ayeb-Karlsson et al. 2018). One often-forgotten but particularly relevant research topic is how gradual environmental changes affect people's migration aspirations and trajectories. Since the consequences of environmental changes are more clearly visible – by local communities, policymakers, and academics – when they occur in an abrupt fashion, the focus on gradual environmental changes leading to migration has shifted towards the background when discussing environmental migration and displacement. Yet, all kinds of environmental changes could result in migration or encourage people to migrate, and these migration dynamics may occur

differently and create vulnerable groups that are unable to deal with such changes. Researchers, therefore, should not focus only on those who actually migrate but also include 'trapped' or 'immobile' populations (Zickgraf 2018; Ayeb-Karlsson et al. 2018) as well as those who have developed migration aspirations but are unable to put these into practice (Adger et al. 2005, 2009; UNDP 2018).

To avoid discussions on whether these migration aspirations are actually attributable to climate change or not, and to be able to fully comprehend how people perceive all kinds of changes in their natural environment, this book uses the term 'environmental change' instead of 'climate change' as it encompasses both climate changes and all other types of environmental changes. Only when participants of this study or cited authors explicitly refer to climate change, or when the author of the chapter wishes to discuss 'climate change discourses', is this term included. This way our understanding of the environmental-related mobility is inspired by the definition of environmental migrants provided by the International Organisation for Migration (IOM):

> 'Environmental migrants are persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad' (2011:33).

This definition may not necessarily be the most aligned to serve legal purposes or to differentiate between types of environmental changes, disasters, migration patterns, and so on. This is often a tricky issue since previous studies already encountered many difficulties in defining, conceptualizing, categorizing and theorizing about environmental migrants or displaced people (e.g., TGOFS 2011; Gemenne and Blocher 2016; Bose and Lunstrum 2014; Piguet 2010). Numerous attempts to set up a comprehensive typology or provide a clear-cut definition for policymakers have failed. As the definition formulated by the IOM is very open for all kinds of forms and interpretations of environmental migration – and is also criticized for this (Bose and Lunstrum 2014) – the use of this definition allows research subjects to interpret this form of migration broadly. For researchers, this definition helps to further delineate the topic and understand people's views on environmental migration as well and consider this in their research. Additionally, the concepts used in this definition imply a wide approach to all kinds of terms used to refer to environmental changes (broad or narrowly defined) as well as types of migrants, for instance refugees, migrants, displaced persons, and so on (Zetter 2017). Thus, the use of this definition in this book has the advantage of being very comprehensive and of not having any legal repercussions. The inclusion of both sudden and progressive changes in the environment is also well-suited to conducting research in the Moroccan context.

## 1.2 The Moroccan Context

The book's focus on Morocco is inspired by the ongoing environmental changes that occur at a rapid pace and associated policies on this topic, as well as by its very specific migration history in the last decades. Furthermore, the Moroccan research setting helps to discuss how a particular migration context and associated culture of migration (cf. Timmerman et al. 2014a, b; Timmerman 2008), as well as the exposure, sensitivity, and adaptive capacity towards environmental change (see also IOM 2011; Wodon and Liverani 2014) interplay and influence perceived environmental changes, migration aspirations, and trajectories. The Moroccan case will be used to demonstrate the overarching and encompassing ways environmental factors – often induced by environmental changes – are very distinctly related to migration and how they affect groups differently. In doing so, this book approaches the interplay between migration and environmental change from a migration perspective in which environmental stressors are integrated.

Morocco is a country that has been highly affected by migration in the last century and which has established dense ties with Western countries, such as France and Belgium (Mahieu et al. 2017). These ties, partly rooted in colonial history and geographical proximity, have been strengthened throughout the last century by extensive migration (cf. Chap. 2: Belgium). Additionally, many regions in Morocco are increasingly confronted with problems of water scarcity, drought, and desertification over time. Despite the gradual nature of most of these environmental changes, more extreme and abrupt weather events occur simultaneously, such as snowfall in the desert or floods in dry regions or waterbeds (Sowers et al. 2011; De Haas and El Ghanjou 2000; Wodon and Liverani 2014; IPCC 2014). The overall impact of environmental changes is mainly visible, and therefore perceived, over time. Consequently, the causes of these changes cannot always be clearly attributed to environmental change but interact with other societal and human factors.

In sum, Morocco provides an interesting case study as some of its regions are more 'vulnerable' to the disruptive effects of environmental change than others while being simultaneously affected by distinct migration histories and dynamics (e.g., De Haas and El Ghanjou 2000; Wodon and Liverani 2014). In this book, two regions in Morocco that are highly affected by environmental change and out-migration, namely Tangier and Tinghir, are studied in greater depth (cf. Chaps. 5, 6, and 7) and connected to how migration trajectories and aspirations are linked to environmental changes by Moroccan migrants living in Belgium (cf. Chap. 8).

## 1.3 The Book's Objectives

This book aims to offer the reader an interdisciplinary case study in which distinct aspects of environmental migration are readily linked to the broader social, economic, and political context, using insights from migration studies but also building further on existing research in cultural and political ecology. In doing so, both people living in regions of origin and in the new immigrant country are being asked about their migration aspirations.

First, *the study of the interactions between migration research and environmental studies is still in its infancy*. The migration approach is innovative as most previous studies sought to gain a better understanding of environmental migration in order to document and anticipate the legal issues related to this topic. For instance, this is the case of previous research focused on the recognition or categorization of 'climate refugees or migrants' (cf. Havard 2007; Stavropoulou 2008; Biermann and Boas 2008; Zetter 2011, 2017). Incorporating insights from migration research could help to better consider migration as one potential adaptation strategy or to see migration as a part of a wider (regional) climate change adaptation policy or both (Tacoli 2009; Gemenne and Blocher 2016; UNDP 2018). Furthermore, focusing on environmental migration sheds a new light on migration theories, since the entanglement between different migration drivers, internal migration dynamics, and processes of decision-making as a consequence of environmental changes are harder felt by people living in particular areas, e.g., African countries (Busby et al. 2014, 2010) and varies across social classes and gender (Sassen 2014; Busby et al. 2010, 2014; Vincent 2004; TGOFS 2011; Warner et al. 2012; Gioli and Milan 2018). Studying the differentiated impacts of environmental changes from a migration perspective is therefore necessary to fully understand the vulnerabilities of people living in areas heavily impacted by climate change and thus develop adequate and context-specific policies and responses.

Second, building further on some basic premises of cultural ecology, the aim of this book is to pay explicit attention *to the perceptions of individuals and communities of people living in Morocco*. This is done by taking into account people's views on migration, environmental changes, and existing migration cultures, within the broader context of their beliefs on nature and worldviews as well as of their identities (Haenn and Wilk 2006). Incorporating local identities and views may be a well-developed idea and part of a rich tradition in sociology and anthropology, yet previous studies on environmental migration and displacement often seem to go 'too fast'. By seeking to immediately see and study linkages between environmental changes and migration, there is a risk of forgetting, ignoring, or losing touch with the actual dynamics, hindrances, and patterns of human behaviour and resulting migration (or non-migration) trajectories. For instance, immobile groups may wish to migrate but are unable to do so as they lack resources and networks to put their desire into practice (Zickgraf 2018). Others do migrate but – again, due to limited resources and transnational networks – often travel first to nearby larger areas and conglomerates (Warner 2010), losing connection with their initial migration motivations.

Similarly, religious beliefs and worldviews are often not considered when linking environmental changes with migration, thus underestimating the importance of such belief systems (Hand and Van Liere 1984; Salmón 2000; Van Petegem and Blieck 2006; Vining et al. 2008). According to insights in cultural ecology, the main aim is to put human nature and culture back into research on environmental migration.

A third way in which this book aims to be interdisciplinary is to also *elaborate further on the main rationale behind political ecology*, namely to *study how environmental issues and changes are related to the broader political, economic, and social contexts*. More specifically, in this field of research, attention is given to the interplay between social, political, economic, and environmental factors (Robbins 2012). The need to incorporate the context in which environmental migration occurs coincides with previous findings from migration research. People migrate for a complex set of reasons, and it is only when considering this intersection that one can fully grasp migration aspirations and pathways (Timmerman et al. 2014a). This may not only help to understand why people migrate, but also help to understand the pressures put on the local natural environment. More specifically, global processes, such as global markets and migration dynamics, and ongoing technological innovations and economic realities, can impact local life to a far-reaching extent (Robbins 2012). By applying a more regional approach to the study of environmental migration, the idea behind this book is to incorporate the broader context and interaction with this context in order to fully understand local processes.

To conclude, this Moroccan-Belgian case-study will be used to empirically demonstrate how environmental changes and the migration context interact, evolve in mutually dependent and gradual ways, and shape how future generations approach both themes. Applying a regional but also transnational approach to environmental migration allows us to delve deeper into the interplay of factors possibly contributing to environmental migration, providing further ideas on how future policymakers and academics can approach this topic.

## 1.4 How this Book Is Structured

The first part of the book presents the study's theoretical and methodological background. Elaborating more on existing studies in the fields of migration and environmental change studies, we then introduce in the second chapter an overview of existing theories of migration and how research on environmental migration adds to these, and provide some theoretical reflections on the study of environmental migration and displacement. In doing so, we strive to present key ideas and theories on which the subsequent chapters are based and that allow us to understand how environmental changes may have a different impact on people living in a similar environment. We depart from the overview given by Castles et al. (2014) of theories of migration. Afterwards, we reflect upon findings derived from existing models on migration aspirations (i.e., Carling's original and refined aspirations/ability model, Carling 2002; 2014; Carling and Schewel 2018; and the EUMAGINE model,

Timmerman et al. 2010, 2014a) and discuss new theories and models on environmental migration (e.g., TGOFS 2011) to reconcile existing theories of migration with environmental migration. This overview will be used as a starting point for the further study of migration aspirations that integrates insights from migration and environmental studies. The use of these theoretical and methodological reflections on the study of environmental migration helps critically assess the ways in which the urgency and nature of environmental changes, corresponding adaptation strategies, feedback mechanisms, and so on, could hamper or accelerate issues related to the consequences of environmental changes, and finally, immigration interfaces.

The third chapter, 'Environmental change and migration in Morocco: what has been done so far?' (Loubna Ou-Salah and I, both affiliates of the Centre for Migration and Intercultural Studies of the University of Antwerp) provides an overview of the existing literature drawn from research conducted in Morocco on this topic. This chapter is divided into two sections, the first focusing on the migration history of Morocco and the second on environmental changes in Morocco. By doing so, we delve deeper into the hot topics in the academic literature and summarize the findings of existing studies in Morocco, delineating gaps in knowledge and areas of study. This chapter provides the reader with a clear overview of what has already been done, what still needs to be done, and the issues linked to this book's main theme that have already been studied. This literature review helps the reader understand the difficulties in grasping how environmental change and migration are related to each other and also provides the reader with more detailed information about the Moroccan context.

Chapter 4 sets out the research settings and methods used in detail, considering the research context and used research design, the difficulties during the fieldwork, in both Morocco (by Lore Van Praag) and Belgium (by Elodie Hut), as well as researchers' positionalities. More information is provided on the data analysis and collection processes, as well as on the available data on which subsequent chapters are based. This chapter provides useful insights into the methodological issues facing researchers when investigating in gradually-degrading areas affected by environmental change, into the very diverse ways environmental changes that may be linked to migration outcomes and dynamics, and how these relate to a particular context. Outlining the research methods used in both the Moroccan and Belgian case studies is needed to interpret the empirical studies presented in the second part of the book.

Indeed, the book's latter half consists of empirical chapters on Morocco and Belgium. It focuses on the perceived relationship between environmental change and migration aspirations in Morocco, studying the linkages drawn by people living in both Tangier and Tinghir between environmental changes and migration. In the fifth chapter, 'Perceptions and explanations of environmental change in Morocco', attention is given to how inhabitants in Tangier and Tinghir perceive environmental changes in the Moroccan context and how this is explained by the study's respondents. In this chapter, intraregional and interregional differences are discussed with regard to the perceptions of environmental change in Morocco. These differences are then connected to the respondents' professional background and interactions with

their immediate natural living environment, combined with other sociodemographic characteristics, and the extent to which they are informed and educated on environmental matters. These perceptions are linked to people's approaches towards human relationships and worldviews.

In Chap. 6, 'How environmental change relates to the development of adaptation strategies and migration aspirations', inhabitants' views on and explanations of environmental change will be linked to the perceived risks associated with environmental changes, thus contributing to a better understanding of how adaptation strategies are imagined and developed. This can help study and frame the perceived linkages between environmental changes and migration. These insights might nuance the prevailing academic and policy discourses in many Western countries, which often link environmental change and migration in a very robust way without considering the inputs and perspectives of the inhabitants of the discussed regions (e.g., previous IPCC discourses). Hence, it is important to fully understand which adaptation strategies people develop to deal with the impacts of environmental change and to examine the extent to which migration is consciously used as such an adaptation strategy or could be used as a valid adaptation strategy in the future.

Examining the perceived linkages between environmental change and migration is necessary to gain more insights into the overall migration dynamics characterizing these regions and the importance of environmental factors in migration aspirations and trajectories. Therefore, in a seventh chapter, the nexus between environmental changes, culture of migration and migration aspirations is discussed. This chapter compares the two studied settings in Morocco, namely Tangier and Tinghir, in greater depth. Tangier can be seen as the gate to Europe, as well as an attraction pole for internal migrants looking for jobs in this growing industrial city. Conversely, Tinghir has been the gate to the desert, receiving not only many internal migrants from the surrounding villages, but having also been traditionally the region of origin for many migrants who were recruited to go work in Western European countries such as Belgium and France. As both settings have very particular migration histories and established many national and transnational migrant networks over the last decades, this has also contributed to shaping the migration aspirations of the inhabitants to a large extent (De Haas 2010a). In line with previous research on migration aspirations and prevailing cultures of migration, migration is not automatically regarded as a positive thing, however, this varies across the studied region (cf. Timmerman et al. 2014b). Dependence on remittances and living conditions in the region of origin can especially determine the extent to which migration is desired. Networks also matter for sharing knowledge on environmental changes and prevailing discourses and may impact dependence on agricultural production. Hence, in this chapter, it is discussed how migration and the resulting cultures of migration further shape the adaptation strategies used to deal with environmental changes in each region studied.

In the eighth and final empirical chapter, the empirical contributions based on interviews conducted with people living in Morocco are connected with insights and views of migrants living in Belgium – an established migration destination for people living in Morocco. In this chapter, titled 'Connecting environmental changes,

migration causality and transnational practices. Insights from the Moroccan diaspora in Belgium', Elodie Hut and Caroline Zickgraf of the University of Liège present the results of qualitative in-depth interviews conducted with Moroccan migrants living in Belgium, documenting their migration background in order to gain insight on their journeys. As it is unlikely that one could single out environmental changes as a key driver of migration to Belgium, this chapter provides an assessment of how migrants perceive the environment to have influenced their migration journey as well as how they perceive current environmental disruption in their communities of origin. This chapter specifically underlines the multi-causality of migration factors and stresses the interlinkages between environmental and socio-economic migration drivers of migration in natural resource-based economies. As remittances provide further evidence of the existence of strong transnational ties between Morocco and Belgium, this chapter also investigates the socio-economic and political conditions through which the transnational practices of migrants in Belgium can support the adaptation and resilience of their communities of origin affected by environmental changes. As such, this chapter complements the book's earlier sections by looking at how similar themes are approached by transnational migrants living in Belgium. The focus on Belgium is of high relevance as it has been one of the countries to which many Moroccans have migrated since World War II, initially as labour migrants and later through family reunification procedures.

Finally, the last chapter summarizes and discusses the main findings uncovered throughout this volume. In doing so, we reflect upon the ways this case study of Morocco can shine a light on larger debates concerning environmental change and migration. The main aim is to challenge researchers and policymakers working on environmental migration, both inside and outside Morocco, to critically rethink their research methods, theories, ideas, and practices. The insights gained through this case study are used as a starting point to elaborate further on the difficulties arising from the migration-environmental change nexus. This chapter seeks to gain insight into the ongoing methodological and theoretical difficulties that occur when studying and designing policies aimed to address environmental migration. Hence, this Moroccan case study is used to illustrate the importance of a context-specific approach in policymaking as political, environmental, cultural, social, and economic factors interplay and impact migration aspirations and trajectories. In this final chapter, special attention is given to demonstrating how this particular case study can inspire future researchers when setting up new research in a different setting or when delving deeper into the Moroccan case. Concrete suggestions are made on how policies on environmental change could consider the social environment and migration histories, and on how the voices of the people involved can be included within these discourses. In this discussion section, it is important to reflect upon the added value of a sociological approach to environmental migration. This adds to the existing literature since it is often mentioned but hardly ever seriously considered that environmental changes affect different groups differently and does not always imply the possibility to adapt or to migrate. Considering that environmental changes reflect how societies are structured and function, policy recommendations are thus

formulated bearing in mind the social and migration environment of regions highly affected by environmental changes.

To conclude, in this book, the authors strive to provide the reader with sufficient insights into particular aspects of the migration dynamics related to environmental changes in Morocco. Qualitative research conducted in both cities in Morocco as well as with Moroccan immigrants in Belgium demonstrate that the interplay between migration and environmental factors is not as straightforward as it seems due to its wider social, political, economic, demographic, and environmental context (see also TGOFS 2011). Hence, this book is innovative as this field of research only started to develop during the last decade and is driven by policymaking needs (McLeman and Gemenne 2018a). More empirical research is needed, as well as theory-development that adds to a better understanding of migration dynamics related to climate change effects (cf. Van Praag and Timmerman 2019). This is particularly important as most research approaches this topic from either a policy or a legal perspective, lacks in-depth empirical data, or both. Additionally, due to the relatively gradual degradation of the natural environment, attention has been given to environmental changes in Morocco (e.g., IPCC 2014, Driouech et al. 2010; Driouech 2010; Filahi et al. 2015; Nouaceur and Murărescu 2016; Knippertz et al. 2003; Born et al. 2008; Climate Expert 2019), but such studies have related it to a lesser extent to environmental migration and displacement. This book aims to provide future research and policymakers with more tools to understand the perceptions, needs, and adaptive capacity of groups that are heavily confronted with and affected by degrading environmental changes in their natural living environment.

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# Chapter 2
# Applying Insights of Theories of Migration to the Study of Environmental Migration Aspirations


The growing interest in environmental migration has led to a wide range of organisations raising awareness on this topic. Politicians and policymakers, for instance, are using arguments that reference environmental migration in their political discourses or increasingly reflect on how to manage this seemingly emerging trend. The rise of this topic on 'the agenda' of policymakers, politicians, non-governmental organisations, and artists, to name a few, immediately calls for some scientific support, framing, or input, which is suddenly in high demand. Also, from a scientific perspective, how people are dealing with ongoing and increasing environmental changes lays bare existing social, ethnic, and gender inequalities. To be specific, when studying environmental changes and disasters, more knowledge can be derived about a society's social and economic structure, relationship dynamics, and the nature of its adaptation capacity. Additionally, more knowledge can be gained about how external communities or countries are related to the studied society (Oliver-Smith 1999).

The study of environmental migration and displacement enhances our understanding of how changes in the natural environment increasingly put the living environment of people under pressure (Dunlap and Marshall 2007; Heinrichs and Gross 2010). These insights are extremely useful for minimising damage and estimating the future vulnerability of people living in these societies as well as for bolstering people's resilience (Oliver-Smith 1999). This becomes even more crucial as global warming renders these environmental changes even more widespread and diverse, complexifying people's and societies' risk perceptions and risk management capabilities as well as their vulnerabilities and resilience. These risks make it even harder to estimate the ways in which ongoing environmental changes are expected to differ in terms of time, intensity, and space.

Remarkably, when looking at existing research disciplines, studies explicitly focusing on environmental migration and displacement recently boomed, with a steep rise in their number over the last two decades (McLeman and Gemenne 2018a). This is not to say that no research on this or similar topics had been conducted previously. A lot of insights could already be drawn from the fields of



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disaster anthropology (Oliver-Smith 1999), disaster sociology (Fischer 2003; Rodriguez et al. 2007), risk sociology (Douglas 1966; Beck 1992), cultural ecology (Steward 1972), environmental sociology (Dunlap and Marshall 2007; Heinrichs and Gross 2010) and legal studies (e.g., El-Hinnawi 1985; Myers 1995; Havard 2007; Morel and de Moor 2012). These works provide a valuable starting point to understanding the nature of environmental migration and the added value of studying this phenomenon.

In this chapter, we argue that more attention should be given to the fact that many environmental problems should essentially also be considered as social problems, and that environmental migration should also be studied from a more sociological perspective and related to migration theories. Hardly any of the research directed at the study of environmental migration applied a sociological framework (McLeman and Gemenne 2018a) or connected it to dominant theories of migration. While sociologists have been reluctant to expand the discipline to include environmental issues, the idea that environmental problems are social problems has slowly but steadily become more and more accepted in sociology. The latter is an important consideration for the sociological study of environmental migration, on which we aim to build further in this book (see also Van Praag and Timmerman 2019).

By presenting existing migration theories, this chapter demonstrates the difficulties confronting researchers when examining environmental migration and the assumptions underlying many discourses on environmental migration and related studies. Building further on this, some theoretical stepping stones are discussed in order to disentangle the multi-layered nature of environmental migration and displacement, the overlapping nature of migration motivations, and the varying nature of environmental changes (McLeman and Gemenne 2018b; TGOFS 2011). While there could be multiple insights regarding how environmental changes are related to migration, and vice versa, in this book, we specifically focus on studying how migration aspirations are developed when living in an area affected by environmental change – in this case, when living in Morocco and, in the last chapter, by those reflecting retrospectively on their migration aspirations and trajectories after having migrated to Belgium. Focusing on such migration aspirations also matters as these could recur in how migrants themselves perceive and interpret their migration trajectories in terms of environmental changes and to which extent they acknowledge its role within their own migration trajectory as well as in that of their wider social networks. We set out the conceptual framework that forms the basis of this book's empirical analyses, departing from existing migration theories and linking them to research on environmental migration. Hence, this provides the main input to solve the actual research question. We delve in-depth into the examination of migration aspirations, then study how these could have resulted in actual migration trajectories, regardless of the fact that these migration aspirations were not necessarily inspired by, or attributable to, environmental change.

Finally, we argue that the chapters contained in this book do not provide a comprehensive overview of all possible trends in environmental migration and displacement, but rather show the importance of using case studies to fully understand the interrelated nature of factors contributing to migration aspirations and

trajectories within one particular context. As a result, this Moroccan-Belgian case study enables us to gain more substantial information on people's vulnerabilities, situated intersectionality, and on social and other inequalities that are put under pressure by environmental changes (Yuval-Davis 2015).

## 2.1 Theories on Migration Applied to Environmental Migration

Building further on the overview given by Castles et al. (2014), in this section we aim to outline some key migration theories that frame and give more insights into how environmental changes drive people (to aspire) to migrate. Three main groups of migration theories can be distinguished. A first group consists of *functionalist migration theories*, which see migration as a way to create more equality within and between countries and that serves the interests of most people. The second group of theories includes more *historical-structural theories*, which place migration within a broader context of social, political, economic, and cultural structures, seeing migration as a way to maintain and reinforce existing inequalities between and within countries, as well as to have easy access to pools of cheap labour. A third set of theories reacts against the previous two strands of research, including meso-level and micro-level factors more prominently, namely: *new economics of labour migration (NELM) theory, migrant network theory, transnationalism* and *migration systems theories.* We briefly describe the main rationale of these theories and reflect on how these ideas are also presented in the literature on environmental migration or could be useful for the analyses in this book.

The most popular *functionalist migration theories* consist of 'push' and 'pull' theories and neoclassical and human capital theories. Migration theories often depart from *'push' and 'pull' models* in areas of origin and destination. Push factors, such as population growth, and pull factors, such as demand for labour, tend to interplay and cause people to (aspire to) migrate from one region to the other. These push-and-pull theories often lie implicitly at the basis of a lot of research on environmental migration as environmental degradation is seen as a push factor for migration. Moreover, these imaginaries are very influential in the framing of environmental migration, both in research and media discourses, as environmental factors are often very literally interpreted or portrayed as 'push factors'. This is especially the case for sudden environmental changes, such as floods and storms, which negatively affect people's living environment and means of survival, or for rises in the sea level that physically hampers or even bars people from continuing to live in their natural living environment. This can be exemplified through the symbolic case of Small Island States (SIS) in the Pacific Ocean whose inhabitants will be forced to move due to rising sea levels (El-Hinnawi 1985; Farbotko and Lazrus 2012) or disasters like Hurricane Katrina (Mark 2017).

This distinction between push and pull factors is certainly conceptually relevant and also underlies the IOM's definition of environmental migration (cf. below) (Warner 2010). Nevertheless, push-and-pull theories are merely descriptive and may not sufficiently add to a better understanding of how such factors interact or their roles (Hunter et al. 2015). This already brings to the fore one of the intrinsic difficulties of studying environmental migration (cf. below), namely: interrogating how environmental change interacts with other drivers of migration and explains return migration. Environmentalists use these functionalist theories to emphasize the fact that climate/environmental change will cause many people to migrate in order to alert people on the urgency of climate change. By contrast, migration scholars do not necessarily see this as a one-on-one relationship, and even argue that migration could be seen as a way to respond to these changes.

Another group of functionalist migration theories, namely *neoclassical and human capital theories,* understand migration as a crucial part of the development process in which surplus labour in rural areas can serve as a potential labour force in urban industrial economies. Applied to environmental migration, and particularly to individuals living in gradually-changing natural environments, environmental changes mainly impact drivers of migration by creating a surplus of labour in rural areas, urging rural labourers to migrate to nearby cities offering more job opportunities. This idea served as the basis for selecting the Moroccan case studies in this book (i.e., Tangier, a city that attracts a lot of migrants from rural areas, and Tinghir, a city characterised by emigration of mainly young people, first to Europe and nowadays to larger urban areas). Another example is the study of Massey et al. (2010) in Nepal, in which human capital is found to matter, amongst other factors, in explaining migration outcomes in response to environmental change.

Overall, these functionalist theories depart from the idea that humans are rational actors who make rational decisions regarding migration. As such, migration is also seen as a process that optimizes the allocation of production factors – labour in particular. Hence, with regard to environmental migration, this requires that all migrants are fully informed about any environmental change in their immediate living environment and aware of all possible adaptation strategies. The latter may be problematic given the fact that humans are not rational actors; nonetheless, it appears necessary to consider, study, and introduce in the study of environmental migration (cf. Chap. 5). Additionally, it stresses the voluntary nature of migration, which is not necessarily adequate when talking about environmental displacement (e.g. disasters). However, at the same time, adaptation strategies should be considered together with other social, economic, political, and cultural processes that shape migration and cause people to migrate.

*Historical-structural theories* encompass the critiques on the functionalist theories on migration as they depart from the idea that individuals do not have a free choice to migrate since they are structured and constrained by larger structural forces. For instance, the reorganisation and mechanisation of agriculture could have led people to search for alternative ways to survive and, as a consequence, driven them towards urban areas. For the study of environmental migration, the interplay between environmental changes, available adaptation strategies as well as

the broader structural context could play a role in the better understanding of the development of migration aspirations and subsequent migration trajectories. While most of these historical-structural theories delve deeper into structural inequalities between countries, more attention should also be paid to inequalities in resorting to adaptation strategies in the face of environmental changes, in accessing the resources that are necessary to secure alternative incomes, and so on. Within this stream of historical-structural theories, two main theories are developed: *globalisation theory* and *segmented labour market theory*.

G*lobalisation theory* starts from the idea that migration should be seen as an element linking societies and making them increasingly interconnected. This globalisation process mainly departs from economic processes (e.g. transformations in agriculture) and involves technological transformations and associated political processes. According to these theorists, nation-states play crucial roles in understanding migration as they remain the primary locus for the development of policies on cross-border movements and non-migration policies (e.g. welfare state, citizenship, and so on) that indirectly impact migration. An example of a study on environmental migration that departs from this approach is the work by Marchiori et al. (2017) examining how environmentally-induced income variability could become a driver of human migration in 39 Sub-Saharan African countries.

The second theory in this research strand is the *segmented/dual labour market theory*, which argues that increased labour market segmentation has taken place. The primary labour market consists of workers selected by their level of human capital. The secondary labour market consists of workers that are disadvantaged in terms of educational level, training, but also in gender, race/ethnicity, and legal status. The segmented labour market theory helps to gain insight into how migration keeps occurring, despite high employment rates, and can even benefit employers. This could also partly help to understand why everyone does not develop migration aspirations when their immediate living environment is faced with the adverse impacts of environmental change and how this may be shaped by gender, socio-economic status, race/ethnicity, and so on.

In contrast to the functionalist theories on migration, historical-structural approaches have left little space for individual decision-making and could be interpreted as very deterministic. In particular, when talking about environmental migration in a gradually-degrading natural environment and where a large share of the population works in the agricultural sector, the deterministic interpretation of an historical-structural approach can hinder the understanding of why farmers aspire to migrate. Previously, these theories had too frequently assumed that people working in agriculture in smaller communities are to a large extent isolated and stable, which renders them immobile (De Haan 1999; Castles et al. 2014). Although it is important to avoid such simplifications, it is important for the sake of this study to not only focus on the development of migration aspirations, but also to understand why people may not aspire to migrate and how this links to the occupations they have or wish they had. To respond to these two main strands of theories of migration and to incorporate the critiques on these main strands led to the development of the following four theories: *new economics of labour migration, migrant network*

*theory, transnationalism and diaspora theories*, and *migration systems theories.* This line of research argues that migration can be seen as an adaptation strategy to deal with the adverse impacts of environmental change (cf. the rationale behind the MIGRADAPT project; Kniveton et al. 2008; Gemenne 2010; Gemenne and Blocher 2017; Adger et al. 2018; Adoho and Wodon 2014; Hunter et al. 2015). The concern of migration scholars, according to whom studies on environmental migration should consider the agency of households and how environmental change impacts the livelihoods of people and living communities, could be addressed by looking at incorporating insights from these 'new' strands of research. We now discuss the impact of each one of these theories on the field of study of environmental migration.

First, the *new economics of labour migration* (Stark and Bloom 1985; Stark 2005; Taylor 1999) perceives migration as a way to mitigate the risks faced by households and find resources that can be used for future investment in the household's economic activities. This could be very relevant when facing uncertainties related to environmental change and perceived future hazards related to environmental changes. Hence, the perceived risks in one's natural living environment are a precondition to understanding people's actions and migratory decisions (cf. Chaps. 5 and 6). For example, Hunter et al. (2015) argue that migration is often a household strategy to diversify risks that interacts with household composition, individual characteristics, social networks, and historical, political, and economic contexts. It is in this light that migration is seen as one of many long-term adaptation strategies for coping with environmental change. Consequently, many scholars working on climate change risk aversion and adaptation strategies have applied this approach and studied migration as one way amongst others to adapt to climate change – for instance, (temporary) migration as an adaptation strategy for farming households in Ghana (Antwi-Agyei et al. 2014) and Senegal (Mertz et al. 2009).

Second, *migrant network theory* further examines how networks between migrants and their families/households back home are established and maintained, thus facilitating further migration. This theory posits that factors such as colonisation, labour recruitment, shared culture, or geographical proximity initiate migration flows. However, once these social networks between migrants have reached a significant critical number, new migration flows are developed, leading to 'chain migration' or 'network migration' (Massey et al. 1993). Hence, when applied to environmental migration, it is important to distinguish initial factors, such as environmental change that may have started migration flows and determined popular destination areas; however, other factors may have led to the continuation of these migration flows. Or the other way around could work as well: although initially people may have migrated for other reasons, others could follow when facing disruptive environmental changes in their immediate environment.

Third, *transnational and diaspora theories* have argued that globalisation has led to the development of global networks and the increased ability to maintain networks across the globe, regardless of the distance (Basch et al. 1994; Cohen 1997; Glick-Schiller 1999; Levitt and Glick-Schiller 2004). In these theories, identity formation based on the migrant's experience and membership in transnational or diaspora

communities is central. However, applied to the field of environmental migration studies, it is considered that these communities can facilitate the development of adaptation strategies when dealing with environmental change, especially when grouping remittances together and setting up non-governmental organisations that reinforce the ties with 'home' (cf. Chaps. 6 and 7; Warner 2010; Miller et al. 2006).

Finally, *migration systems theory* posits that migration is related to other flows of material goods, ideas, and money (Mabogunje 1970; Levitt 1998). It is in this line of research that the development of 'cultures of migration' (Timmerman et al. 2014b), which is very much applicable to the Moroccan context (De Haas and El Ghanjou 2000; De Haas 2007), should be situated. Cultures of migration refer to existing feedback mechanisms between international migration patterns which eventually impact the development of migration aspirations in the region of origin (Timmerman et al. 2014b) (cf. Chap. 7). Another study that departs implicitly from this theory is the work of Nguyen and Wodon (2014) examining the impacts of weather shocks and households' abilities to recover in Morocco. In the case of environmental migration, this could relate to the sharing of ideas concerning environmental/climate change and adaptation strategies (cf. Chap. 5) and resources to develop and implement such adaptation strategies (cf. Chap. 6). Moreover, as these flows can change lives irreversibly, they can therefore impact the need or aspiration to migrate. Overall, this last set of theories gives more attention to the agency of migrants and can help understand how people develop and frame their migration aspirations within the Moroccan context.

## 2.2 The Study of Environmental Migration

Drawing from the Foresight report (TGOFS 2011), Castles et al. (2014) generate a number of key points that must be kept in mind when studying environmental migration. First, migration will continue, with or without environmental changes, as it is driven by social, economic, political, and cultural factors. Second, the impact of environmental change could both increase and decrease migration across the world. Third, when trying to limit migration due to environmental change, it is important to bear in mind that this could lead to 'impoverishment, displacement and irregular migration'. Finally, regardless of whether one could disentangle the combined effects of all drivers of migration – i.e. social, political, economic, environmental, demographic – the impact of environmental change on migration is undeniable (Castles et al. 2014: 211). However, when connecting this strand of research with previous insights in theories of migration, the following key finding emanating from migration studies must be kept in mind:

> 'the volume and complexity of migration often *increases* with development. This is because improved access to education and information, social capital and financial resources increases people's aspirations and capabilities to migrate, while improved transport and communication also facilitate movement' (Castles et al. 2014: 25).

Hence, when environmental changes impacts the poorest or most vulnerable groups in society, it is important to study how this affects their migration aspirations as well as their actual migration trajectories. As the research on this topic is relatively recent, in academic terms, many studies have first focused on mapping out existing migration patterns and trajectories related to environmental changes. These studies already indicated that the type of migration trajectories that environmental change usually brings about have a specific pattern. Given that the impact of environmental changes is the strongest for the most vulnerable individuals and groups in society, this can also affect their migration trajectories. As a result, many people are more likely to travel smaller distances, travel to the nearest urban centres for better work facilities or existing (family) networks, or to travel a greater distance in different stages (McLeman et al. 2016). During such 'fragmented journeys' (Collyer 2010) people tend to adapt to their new living conditions and gradually develop new migration aspirations, frames of reference, and migration motives. This makes it more difficult to ascertain what the original migration reason was, as well as the region of origin. Furthermore, a large proportion of cross-border 'environmental migrants' are previously internal migrants (McLeman and Gemenne 2018a). This migration trend is likely to continue in the future, given the vulnerable position that many potential climate migrants occupy in their society.

Additionally, as mentioned earlier, we should also take into account that some particularly vulnerable groups are not able to migrate since this requires a certain amount of resources (Zickgraf 2018). Finally, there are many differences in the duration of their residence period (temporary or permanent) outside of their place of origin (McLeman and Gemenne 2018a). Again, social differences arising across migration trajectories and dynamics reflect and reinforce existing inequalities in society (McLeman et al. 2016). Since environmental migrants are more likely to follow short migration paths and since we must also acknowledge the existence of large groups of immobile populations affected by environmental change, transnational migration as well as the categorization of migrant groups are also impacted. While there is a lot of internal or regional migration, transnational migration is only possible when combined with other migration reasons or migration schemes. For example, as demonstrated in Chap. 3, since the first migrations to Belgium after the second world war, the regions of origin of many Moroccan migrants have often faced water scarcity and diminishing economic opportunities. Due to the organization of large-scale labour migration to Belgium and other European countries, many people were able to migrate, to better support their livelihood and that of their families (see, for example, De Haas and El Ghanjou 2000). Similarly, some researchers argue that the arrival of Syrian war refugees is the result of a combination of political unrest and a persistent drought, resulting in famine and war (Kelley et al. 2015; Piguet et al. 2011).

Overall, it can be concluded that the different characteristics of environmental migration, namely the nature of the migration trajectories (temporary, short distance, internal migration), the affected (immobile and vulnerable) groups and the interplay between different migration drivers, render migration phenomena more complex (Gemenne 2010). This is in line with previous findings in migration studies that have

long shown that, in order to understand drivers of migration, the distinction between internal and international migration, as well as between 'forced' and 'voluntary' migrants is conceptually not always relevant. Rather – and this is crucial for the understanding of environmental migration as well – it is important to recognise that the drivers of migration are manifold, interconnected, and fall within a 'continuum'. Nevertheless, less is known on which combined set of factors actually causes people to migrate and in particular the role played by natural environmental changes herein, and how this influences the development of migration aspirations. Instead, many scholars and policymakers acknowledge that environmental changes put other migration reasons under pressure (TGOFS 2011; IPCC 2014), acting as a 'threat multiplier', yet often fail to study these in-depth or consider how this is intertwined with social, ethnic, and gender inequalities in a specific region. This is especially important in areas such as Morocco where gradual environmental degradation is occurring, as the impacts of environmental changes are often intertwined with other socio-economic factors causing these environmental changes (e.g. human activity) and are often spread over time. Consequently, the underlying or interfering reasons for migration are hard to distinguish during one's lifetime and in most cases are entangled with other migration reasons. Furthermore, previous theories of migration and studies on environmental migration often do not consider or sufficiently explain return migration. This is however crucial as there are patterns of return migration that occur after a sudden disaster in a specific area, for instance Hurricane Katrina (McLeman et al. 2016).

## 2.3 The Focus on Migration Aspirations Due to Environmental Change

In this book, we argue that it is important to set out exactly why the study of migration aspirations is so crucial for a better understanding of environmental migration. There are multiple reasons for focusing on migration aspirations and which build further on theories of migration (cf. previous section, Castles et al. 2014). First, focusing on migration aspirations, instead of migration trajectories, enables us to better study the gradual development of migration decision-making processes, to appraise the role that environmental changes play herein, as well as to understand the (structural) hindrances people experience to actually materialize their aspirations or even start envisioning migration.

Second, when questioning people's migration aspirations, we also receive more insights into the role attributed to environmental changes within this decision-making process as well as the extent to which people perceive and categorize themselves as 'environmental' migrants. This is in line with a third point, which could be the study of the overall discourses, opportunities, and structures in which migration aspirations are (not) perceived to be linked to environmental changes. For example, previous law cases have demonstrated the (lack of) migration discourses of

people living on islands in the Pacific Ocean, often portrayed as 'the first climate change refugees'. This may contrast with people living in other regions, in which the linkages between environmental changes and migration is far less mediatized, politicised, and prevalent in popular discourses (cf. McNamara and Gibson 2009; Farbotko and Lazrus 2012; Ayeb-Karlsson et al. 2018). A fourth reason for which the study of migration aspirations could be useful is the fact that explicit attention could be given to populations that are either 'trapped' (i.e. people who wish to migrate but are unable to do so) or 'immobile' (i.e. people who do not aspire to migrate, despite clear environmental degradation in their immediate living environment).

The study of migration aspirations broadens the environmental migration research domain by considering the reasoning behind the development of migration aspirations and the extent to which people are able to put such aspirations into practice. By linking these migration aspirations to the study of how people retrospectively evaluate and perceive their own migration trajectories, the prevailing discourses on environmental migration could be nuanced and studied from a multilevel approach (See the Belgian case study in Chap. 8). In particular, when discussing environmental migration it is often assumed that there is a straightforward and linear relationship between environmental changes and migration – a relationship of which people's full awareness is clearly expected. However, both awareness of environmental changes and risks (cf. Beck 1992) and consciousness about one's migration aspirations and factors impacting these decision-making processes (Carling and Schewel 2018) are far from being a given. More sociological insights into these matters could be of added value since this would enable us to study how people perceive and respond to their changing living environment, and how people and their households adapt their aspirations to the perceived ability to deal with changes to their environment (Dunlap and Marshall 2007; Heinrichs and Gross 2010; Hunter et al. 2015). Furthermore, more attention should be given to contextual features, as they determine the structures in which people's actions should be considered. The inclusion of the wider context, both at the macro and meso levels and how it impacts micro-level factors, is deemed necessary. This can indeed help us to understand the development of migration aspirations, the final outcomes of the migration-related decision-making processes, and to include the available alternative adaptation strategies people use to deal with environmental changes.

As the research literature on migration aspirations is already abundant, we should note that the development of migration aspirations in the context of environmental change or in this study domain is largely non-existent or hardly made explicit. This is for instance the case for the very influential aspirations/ability model of Carling (2002a, b, 2014; Carling and Schewel 2018) in which a distinction is made between migration aspirations and the abilities to migrate. This is particularly interesting in the context of this book, as both mobility and immobility can be placed in the same model and thus not studied separately (cf. McLeman et al. 2016). Therefore, with regard to environmental migration and displacement, the aspirations/ability model could be especially useful as the distinction between aspirations and abilities facilitates the inclusion of immobile groups – at least conceptually – in research on

environmental migration and displacement (cf. Carling and Schewel 2018). This could also include people who are (internally) displaced due to environmental changes. Consequently, this helps to understand actual migration trajectories and specific environmental migration patterns, including return migration, migration trajectories, and group-based actions and decisions (cf. McLeman and Gemenne 2018b; Bose and Lunstrum 2014). Thus, Carling's aspirations/ability model can already provide a tool for the understanding of the not-always-so-straightforward relationship between environmental migration aspirations and trajectories.

Given the very generic nature of this model, more concrete elements are necessary to understand how migration aspirations are shaped. In doing so, more multilevel contextual factors need to be considered. In doing so, we start from the idea that (the nature of) the environmental changes within a particular socio-economic and political context impacts the decision-making of potential migrants (cf. Piguet 2010; TGOFS 2011). As also later suggested by Carling (2014; Carling and Schewel 2018), the importance of the household level and of collective and social networks in the contextualization of migration aspirations cannot be underestimated. These factors can be found at the micro-level (cf. earlier), the meso-level (including people's surrounding networks and cultures) as well as at the macro-level, for instance, referring to media and policy discourses (Timmerman et al. 2010, 2014a, b, 2018; Van Mol et al. 2018). In this book, we argue that neither migration aspirations, nor the actual realisation/hindrance thereof, are developed in a social vacuum. Hence, one can distinguish between factors situated at three levels – macro, meso, and micro – and which matter for the further development of migration aspirations. Building further on Carling's aspirations/ability model (2002a; Carling and Schewel 2018), this interplay of factors situated at distinct levels of analysis can be decisive for the perceived need and wish to change environment or location of residence (and thus aspirations), as well as having the resources, networks, and legal framework enabling one to do so (which refers to the ability to migrate or to employ alternative adaptation strategies). This interplay is important in that it could help provide more insight into the nature of the migration journeys that people are willing or forced to undertake (temporary, fragmented, local or transnational or both). We now turn to briefly discussing each level of analysis.

At the *macro level*, two main components should be distinguished: a 'natural' and a 'social'. When looking at the *natural environment*, a broad categorisation of the types of environmental changes (abrupt vs gradual; type of effects) helps to understand the consequences one must deal with within one's living environment and the ability to stay (Piguet 2010; TGOFS 2011). However, this distinction is not implacable since abrupt changes may also occur in places that are gradually degrading, for instance. Regarding the *social environment*, the combined social, political, and economic context should be considered to capture a local community's capacity to deal with the effects of environmental changes. Despite the importance of structural and changing factors in the context in which people are living, this has been hardly considered in previous research that mainly focused on extreme, urgent, and pressing short-term matters (e.g., Bose and Lunstrum 2014). Given the complex nature of these interrelated factors, it is sometimes hard to come up with a broad,

all-encompassing theory that would apply to all regions. Therefore, in the case studies of non-migrant populations in Morocco and Moroccan migrants in Belgium, we will not focus solely on these factors, but also appraise the ways in which they impact micro- and meso-level factors.

The incorporation of the larger context in analyses is crucial in this case as it adds to a better understanding of how less extreme environmental drivers of migration, such as increasing drought, affect society as a whole and impact the existing living conditions and income resources, such as livestock and agricultural activities, of people living in a particular region. Following Gemenne and Blocher (2016), this can help understand how migration can be seen as one of the possible adaptation strategies people employ to deal with environmental changes, and see how all these adaptation strategies relate to each other or are used differently according to one's individual and household characteristics (TGOFS 2011). In other words, including a combined set of macro-level factors into one's research design is important as it further shapes the contexts that affect meso- and micro-level factors.

At the *meso level*, both prevailing local cultures and (shared) perceptions on strategies to deal with environmental changes and the perceptions of such changes (Ransan-Cooper 2016; Wodon and Liverani 2014; Dunlap and Marshall 2007; Heinrichs and Gross 2010), as well as the local social networks and migration networks (cf. the EUMAGINE model: Timmerman et al. 2010, 2014a, b; Van Mol et al. 2018), play a large role in the development of migration aspirations and in how decision-making processes are shaped and linked to environmental change. First, the study of the perceived and prevailing environmental change discourses is important. Discourses and perceptions on the nature and the causes of these environmental changes are not automatically linked to environmental change (Bates 2002; TGOFS 2011) and are interpreted in multiple ways, depending on the prevalent cultural, religious, or scientific discourses (e.g., Hope and Jones 2014; Sachdeva 2016; Zietlow et al. 2016). These discourses matter even more in areas – such as many Moroccan regions – where the pace of the environmental/climate changes is rather slow, leading to a gradually-degrading natural living environment in which patterns of weather outcomes over time and changes in intensity are not clearly noticeable for everyone (Wodon et al. 2014; Kniveton et al. 2008). Furthermore, the interplay of macro-level factors may render even less noticeable the impact of environmental changes on people's immediate living environment and situation (Wodon et al. 2014).

Second, apart from these discourses on environmental change, the available resources and local and transnational (migrant) networks are also decisive in shaping both aspirations and abilities to migrate. These meso-level factors refer to the availability of transnational networks, traffickers, cultures of migration, the community's capacity to deal with effects of environmental change, and remittances (see Carling 2002a; TGOFS 2011; Warner et al. 2012; Timmerman et al. 2014a, b; Simon 2018). Moreover, these local and transnational networks give rise to social imaginaries and expectancies of remittances and investment strategies that could turn individual aspirations into collective ones (Carling and Hoelscher 2013). These networks are important to consider when seeking to understand how environmental

changes have differentiated impacts on people living in the same affected area (TGOFS 2011; Warner et al. 2012).

At the *micro level*, people's vulnerabilities, adaptation strategies, and decision-making to deal with environmental changes depend on the wider range of opportunities they can access in their living environment, often situated at the macro and meso levels (cf. supra). This affects both their migration aspirations and abilities, which are often unequally spread across the population (Creighton 2013; Bose and Lunstrum 2014). There seems to be a vicious circle in this regard. Environmental changes can make living conditions more fragile, which in turn increases the risk of living in poverty and leads to the immobility of the groups most vulnerable to the effects of environmental change (Bates 2002; TGOFS 2011; Zickgraf 2018; Ayeb-Karlsson et al. 2018). The most privileged groups in society may have sufficient resources to cope with problems related to environmental change and be able to migrate. This contrasts with the situation of the most vulnerable groups, in terms of economic, political, and social resources who are most likely to aspire to migrate. Hence, all possible adaptation strategies that can be mobilized in order to deal with such environmental changes, as well as factors that increase people's resilience, should be considered, together with the ways these changes lead to the development of migration aspirations and their realisation (Piguet 2010). Unequal aspirations and abilities to migrate across groups living in the same area provides the starting point for understanding the trajectories of migrants and the destination areas.

In this book, a multilevel approach is applied to assess how migration aspirations (or lack thereof) are shaped, reshaped, and realised in the light of the abilities people have, while considering the foreseen and unforeseen, abrupt and gradual environmental changes, social and migrant networks, and prevailing climate change and migration discourses/cultures in Tangier and Tinghir, and including insights from Moroccan migrants living in Belgium.

## 2.4 Conclusions

This chapter sought to demonstrate how existing imaginaries of environmental migration, that also characterize the first studies in this field, fail to consider insights of prevailing theories of migration. Environmentalists, policymakers, and politicians – past and present – have strived to increase awareness of the impacts of environmental changes on people's lives in order to spur immediate action and mitigate climate change. By doing this, they have placed simplistic models at the fore, depicting environmental change, and especially degradation, as a push factor for migration, thus predicting millions of people on the move in the future. Portraying environmental change in apocalyptic terms and using images of 'climate refugees' in campaigns aimed at reducing climate change has put aside a long tradition of research in migration. Incorporating elements from existing theories of migration into the field of environmental migration and considering environmental changes as one of the many drivers of migration, this book will use some key points

from existing theories of migration as a conceptual framework to study the development of migration aspirations when facing the detrimental effects of environmental change in one's natural living environment.

Firstly, migration aspirations should be understood within the context of economic, social, cultural, and political structures. Building further on neoclassical and human capital theories, two main sites of research in Morocco – Tinghir and Tangier – are included, in addition to migrants originating from distinct regions in Morocco currently living in Belgium in order to understand how surplus labour and changing needs in the labour market (including industries in urban environments, agricultural developments in rural areas as well as labour market policies abroad in countries) interact with environmental change. Additionally, this should be understood in the context of increased interconnectedness between societies and global transformations, as noted by globalization theorists. Furthermore, as pointed out by the segmented labour market theory, immobile groups, especially those with specific occupations like those working in agriculture, need to be taken into account as well (cf. Carling's aspirations/ability model).

While these insights and focus areas of previously developed theories of migration frame the main research design and rationale of this book, theories that focus more on micro- and meso-level factors will also be considered in the analyses presented. Combining insights from new economics of labour migration, migrant network theory, transnationalism and diaspora theories, and migration systems theories, individuals are considered as agents who make migration decisions and develop aspirations in light of their existing opportunities, knowledge, and networks, the risks they perceive with regards to environmental change, and individual factors such as age, gender, and occupation. This way, we wish to better understand how the complexities introduced by environmental change impact both migration aspirations and trajectories thus contributing to the creation, persistence, or widening of ethnic, gender, and social inequalities (McLeman et al. 2016; Gioli and Milan 2018). This book therefore highlights how aspirations, abilities, and trajectories relate to each other within the framework of environmental change.

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# Chapter 3
# Environmental Change and Migration in Morocco: What Has Been Done So Far?


Before we delve further into the relationship between migration and environmental change, it is important to gain more insight into the migration history of Moroccans going abroad and the specific environmental changes faced by people in Morocco. Therefore, in the first part of this chapter, we outline the history of Moroccan migration to Europe in general and to Belgium in particular. Morocco provides an interesting case of study with regard to environmental migration, as in the second half of the twentieth century, Morocco evolved into one of the world's leading emigration countries. Moroccan migration is one of the unexpected outcomes in which colonial migration, labour migration, family reunification, and, most recently, undocumented migration combine. Hence, there is a high degree of internal differentiation and dynamics within the migrant population of Morocco (De Haas 2007).

Because Moroccan migration has many consequences for Moroccan society related to development, family, and gender (Schilling et al. 2012), this is also covered in this chapter. In the second part of this chapter, we discuss current and future environmental/climate changes in Morocco that may give rise to migration. Morocco's inhabitants are already experiencing deteriorating environmental conditions and shocks that could endanger their livelihoods, which can create migration movement (Wodon et al. 2014). Finally, in the third part, we discuss the adaptation strategies implemented by the Moroccan government and local or international organizations to better respond to and prepare for (future) environmental changes within Morocco. This chapter as a whole, therefore, seeks to set the contextual background of the different case studies that constitute the empirical material of this book and focus mainly on Morocco but include insights from the Moroccan diaspora in Belgium as well (cf. Chap. 4).



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## 3.1 Morocco's Migration History

### *3.1.1 The Start of Migration from Morocco to Europe*

Already in the pre-colonial population history of Morocco, there were centuries-old seasonal and circular migration patterns between certain rural areas – such as between the Rif Mountains and the southern oases – and the relatively humid regions and imperial cities of western and northern Morocco (De Haas 2005). The French colonization of Algeria in 1830 created entirely new migration patterns in the Maghreb region. Thereafter, the increasing demand for wage labour on farms and in northern cities, such as Algiers and Oran, attracted an increasing number of seasonal and circular Moroccan migrants in the second half of the nineteenth century (De Haas 2007; Fadloullah et al. 2000). The French-Spanish protectorate over Morocco was formally established in 1912. While the Spanish protectorate was mainly limited to the 'Western Sahara' and the northern Rif mountain zone, the French protectorate took control of the centre of Morocco. Hereby, the integration of autonomous tribes into the economy took place and growing cities along the Atlantic coast became a destination for countryside-to-city migration. This French-Spanish partition fundamentally influenced migration patterns (Bilgili and Weyel 2009) and its importance was clearly reflected in them during both world wars. Starting from World War I, Moroccan migration to Europe began mainly under the lead of France. Particularly, a crucial lack of manpower in France during the first world war led to the active recruitment of Moroccan men, primarily from the southwestern region of Sous (Agadir and Tiznit), for the French army, industry, and mines (Bonnet and Bossard 1973). Labour shortages during the second world war also led to the recruitment of Moroccan men in the French-occupied zone (Bidwell 2012). As France stopped recruiting Algerian workers during the Algerian war of independence (1954–1962), the migration of factory and mining workers from Morocco increased (De Haas 2005, 2007).

The late 1950s and 1960s were characterized by a great demand for Moroccan workers, not only in France but throughout Western Europe. Particularly, rapid economic growth in Western Europe led to the expansion of unskilled labour shortages in sectors such as industry, mining, construction, and agriculture. The migration of thousands of Moroccans was initiated by France, Belgium, Germany, and the Netherlands through bilateral agreements signed after Morocco gained independence (Ennaji 2014). This organised migration towards Western Europe boomed, especially from 1967 to 1972 (Reniers 1999). Thus, Moroccan immigration to Europe began here as labour migration to meet the labour shortages in the coal mines, but in the end, Moroccan migrants wound up in more regions and sectors (Timmerman et al. 2017).

In 1973, Europe decided to limit migration because of economic recession brought on by the oil crisis that caused rising unemployment. As a result, Western European countries closed their borders to new labour migrants and introduced a migration freeze. However, this does not mean that the migrant inflow from

Morocco stopped. Family reunification procedures became for most Moroccans the only – albeit successful – way to migrate. Furthermore, these new restrictions on migration in Europe led to more irregular migration, temporary migration, and migration toward North American and Gulf Countries. In other words, migration within the framework of family reunification supplanted individual migration in Western Europe. This was authorized because family was supposed to facilitate the integration of the migrant in the socioeconomic environment of the host country (Ennaji 2014). What is remarkable during these first migration waves towards Western Europe is that most host societies expected that labour migration would only be temporary and that people would return to their countries of origin when no more labour shortages were noted. Similarly, most of the migrants themselves planned to return after saving enough money, in accordance with an old tradition of circular migration. But since Morocco suffered even more from the high oil prices and the global economic recession than the European countries, many Moroccan migrants did not return and remained permanently in Europe (De Haas 2005, 2007). In addition to the deteriorating economic situation in Morocco, the country also entered a period of increasing political instability and repression, with two failed coups against King Hassan II in 1971 and 1972 (Braun 1978). This led many migrants to decide that it was safer to stay in Europe and bring their families too.

Thus, paradoxically, after the migration halt of 1972–1973, a large wave of migration to Europe was initiated through family reunification procedures. It was at this moment that people (both migrants and policymakers) increasingly realized that these migrants' stay would no longer be temporary in these Western European countries but for a longer period of time. Return migration among Moroccans was low compared to other immigrant groups in Europe. Furthermore, the high degree of naturalization of nationality in the host countries, especially among second-generation Moroccans, shows the permanent nature of Moroccan migration in Europe (Reniers 1999). Family reunification still plays a major role in the migration patterns of Moroccans to Europe. Gender parity in the Moroccan migration populations has therefore been achieved through family reunification in the traditional recipient countries. More recent research by Timmerman et al. (2017) shows that although new forms of migration (e.g., students, undocumented migrants) are emerging, Moroccan migrants are still mainly migrating to Europe based on family reunification procedures and especially through marriage migration.

When looking at the migration from Morocco to Western Europe, we should note that this affected Moroccan life significantly, and its impact varied across regions in Morocco. For example, in 2007, the number of Moroccans living abroad had more than doubled (3.3 million) compared to 1993 (1.5 million); 86.2% of Moroccans abroad lived in Europe. However, we should note that not all regions in Morocco are equally affected by the Moroccan diaspora (De Haas 2005, 2007). According to De Haas (2007), three areas of departure can be distinguished for migrants going to Europe: the eastern part of the Rif Mountains, the south-western Sous region, and Atlantic Morocco (mostly river oases to the southeast of the High Atlas).

The Rif area – Nador and Al Hoceima provinces – became one of the most important emigration areas in Morocco (Bossard 1979; Reniers 1999): in 1971,

nearly 19% of the active male population of Nador lived abroad. The Rif region also has a distinctive pattern in terms of destination countries. For example, France received only one-third of Berber emigrants from the north, while it received three-quarters of emigrants from other Moroccan regions. This was strongly determined by the colonial history of the north. Most of the northern provinces were never part of the French protectorate, and as a result migration to France was not an option. Spain, the occupying power until 1956, was at that time a country of emigration and therefore was not a valid alternative as region of destination. As a result, most emigrants from the northern Rif regions live in Germany, the Netherlands, Belgium, and France (Reniers 1999). A second region of departure that needs to be distinguished is Atlantic Morocco – Casablanca, Marrakech, Rabat, Agadir – which became heavily involved in international migration to Europe from the 1960s onwards. This migration was primarily oriented towards France, although there have also been various groups who migrated to the Netherlands and Belgium. Thirdly, a last important emigration area of Morocco is the Souss Valley between the High and Anti-Atlas – the provinces of Agadir, Taroudannt and Tiznit, Ouarzazate, and the northern provinces of Al Hoceima, Nador and Oujda. Soussi also migrated to Algeria from the nineteenth century and as labour migrants and soldiers to France since early colonial times (De Haas 2005, 2007). This was also the first area involved in the international recruitment of guest workers in the 1960s. Apart from these three regions of departure, we should note that the rest of the country is only marginally involved in migration to Europe (Reniers 1999). This also affects their migration aspirations and trajectories as well as the established cultures of migration.

To summarize the migration history of Morocco, there was little migration from Morocco abroad, and in particular to Europe, before the beginning of the twentieth century. Moroccan immigration to Europe began as a labour-related migration for the coal mines. After the migration stop in 1973, immigration from Morocco, which was just a young migration movement, continued in the form of family-reuniting and family-forming. Furthermore, it is important to note is that there is a spatial distribution of Moroccan migrants, both in the country of origin and the countries of immigration.

### *3.1.2 The Vision and Strategic Use of Migration by the Moroccan Government*

During the post-independence period that started in 1956, the Moroccan government encouraged migration for both political and economic reasons. International migration was seen as a way to reduce poverty and thereby prevent political tensions. Since Moroccans from the Berber regions had the reputation of being rebellious to central government, the Moroccan state primarily encouraged migration from such regions (De Haas and Plug 2006). Migrants, whose stay abroad was considered to be temporary, were seen as innovative development agents who would help Morocco with economic recovery. Additionally, the Moroccan government saw migration as

an instrument for national economic development (Mahieu et al. 2017). For example, migration abroad would have relieved pressure on the domestic labour market, causing a backflow of foreign currency.

During this period, the Moroccan state explicitly addressed all people of Moroccan descent as 'nationals' and discouraged their integration in recipient countries until the early 1990s. With such a policy, the government wanted to prevent Moroccan migrants from organizing themselves politically, and the integration of migrants in immigrant countries was seen as jeopardising vital money transfers (De Haas 2009; De Haas and Plug 2006). The Moroccan government acknowledged in the early 1990s that such a policy increased the sense of mistrust among migrants towards the Moroccan state. Fearing a future decline in remittances that are vital to the Moroccan economy, the Moroccan government adopted a more positive attitude towards the integration of Moroccans abroad (Kapur 2005; Mahieu et al. 2017). Furthermore, a new monetary policy has been pursued in Morocco since the late 1980s, with no restrictions on foreign currency exchange and the repatriation of money. Morocco has opened many banks in European countries with strong Moroccan communities (Refass 1999).

In contrast to the overall increasing contribution of migration to the Moroccan development, the remittances have differential impacts on the resources of the families left behind. Remittances are in general sent within family networks, and therefore, reinforce (existing) inequalities between families. Family members who receive remittances and have extensive migrant networks became increasingly prosperous, compared to those without access to migrant networks or who do not receive remittances or both. Consequently, these families influence other people (usually family members, friends and neighbours) to follow the migrant's footsteps, prompting new migrants to aspire to leave the country for Europe. Interestingly, this effect of migration does not automatically increase migration aspirations. Due to the presence of these remittances, being part of migration networks and receiving remittances can reduce the need to migrate and hence, limit the exodus from the countryside and international migration (De Haas and Plug 2006; Refass 1999).

To conclude, the Moroccan government has made it easier to send money to people living in Morocco, rendering migration very important for the country's economic growth. Without Moroccan remittances, poverty would have been much higher. Therefore, a new monetary policy has been pursued in Morocco since the late 1980s, with no restrictions on exchange and the repatriation of money. This has not only affected the development of the Moroccan state, but also the (re) distribution or widening of wealth and inequalities across the Moroccan population, impacting their migration aspirations in various ways.

### *3.1.3 Specific Migration History from Morocco to Belgium*

Although this migration history to Europe also applies to Belgium, some local specificities should be noted. The first phase of Moroccan migration to Belgium was primarily a matter of individuals who dared to take risks. As a result, there were

only 461 Moroccan nationals registered in Belgium in 1960 (Timmerman et al. 2017). This first phase of 'pioneer migration' in Belgium ended in the early 1960s with the signing of bilateral agreements covering Morocco and Turkey, like in the rest of Western Europe. After that, migration was effectively started between 1964 and 1974 (Ennaji 2014), a period described as the second phase that of the 'novice chain migration'. By the mid-1970s, when the migration stop was introduced, 40,000 people with Moroccan nationality already lived in Belgium. However, only a minority of immigrants used official immigration procedures. The third phase (1974–1989) is seen as the 'flourishing chain migration' since the number of Moroccan immigrants risen to 140,000 by 1989 (Timmerman et al. 2017). While labour migration had indeed stopped due to the oil crisis, immigration continued in Belgium largely on the basis of family reunification, as in the rest of Europe (Bilgili and Weyel 2009). This also resulted in intense transnational networks, in particular between regions of origin in Morocco and destination in Belgium. Such networks include a substantial exchange of information that can facilitate the migration process of potential migrants. Subsequently, there was a fourth phase, namely that of 'late chain migration'. In Belgium, the so-called Fast Belgian Law entered in 1989, allowing foreigners to acquire Belgian nationality in a very short time, which was also the case for Moroccan migrants (Timmerman et al. 2017). While in 1992 more than 80% of the new Belgians with Moroccan nationality in Belgium was born, more than half of those nationality changes since 2000 refers to persons born abroad (Schoonvaere 2014). In the Belgian context today, the profile of Moroccan immigrants is becoming increasingly diverse. The majority of Moroccan immigrants in Belgium today still enter on the basis of family reunification, mainly by marriage migration, however the proportion of students, migrant workers, and so-called irregular migrants is increasing. In addition, in the last years more highly skilled individuals and more women belong to this group of newcomers (Timmerman et al. 2017).

Like more general migration patterns from Morocco to Europe, there seemed to be a very specific spatial distribution of Moroccan migrants, coming from specific regions of origin in Morocco and settling in specific regions of destination in Belgium. More than 40% of Moroccans living in Belgium reported having spent their youth in one of the two provinces of the Rif – Nador or Al Hoceima – and more than two-thirds of them grew up in the countryside or in a small town. In 1970, the proportion of the active male population abroad reached almost 50%, of which 13% lived in Belgium. Emigration from Arabic northern provinces – Tangier, Tetouan, and Oujda – has been important because these Moroccan provinces, along with the Rif, are responsible for 80% of Moroccan migration to Belgium. These migrants have largely an urban origin – which in Tangier's case was genuine since it has long been a province with a free trade zone with an important international port. As mentioned above, the Souss-valley between the High and Anti Atlas (provinces of Agadir, Taroudant, and Tiznit) are also a prominent emigration area of Morocco, but Belgium was less important as a destination region for this group of migrants (Reniers 1999).

The settlement of Moroccans in Belgium is also geographically dispersed. Moroccan migrants who arrived in the 1960s have settled mainly in one of the 19 municipalities of the Brussels Region; in 1971, 54.7% of the population with Moroccan nationality lived in the Brussels Region. In many Brussels municipalities there is still a strong concentration of the population of Moroccan origin. For example, the number of people of Moroccan origin in Molenbeek in 2009 was 11 times higher than percentage of people of Moroccan origin in the Belgian population. In Sint-Joost, Koekelberg, and Anderlecht, the number of people born with the Moroccan nationality is seven times higher than the concentration of the same population on Belgian territory. In other Brussels municipalities, such as the City of Brussels, Schaerbeek, Saint-Gilles or Vorst, the concentration of people born with the Moroccan nationality is five times higher than the concentration of the same population on Belgian territory. Subsequently, 15% of the first Moroccan migrants settled in the province of Antwerp – three-quarters of this group in the administrative district of the city of Antwerp. Hence, there is also a striking presence in certain Flemish regions, such as Vilvoorde and Mechelen, where the number of people born with the Moroccan nationality is three times higher than the concentration of the same population on Belgian territory (Schoonvaere 2014). In addition to this settlement in Brussels and Antwerp, this first wave of migrants also went to Belgian industrial and mining basins. In particular, in 1971, 8.1%, 7.6%, and 6.3% of the population with Moroccan nationality settled in the provinces of Limburg, Hainaut and Liège, respectively (Schoonvaere 2014). Kesteloot (2006) suggests that this geographical spread of Moroccan migrants is linked to the structure of the housing market and the socio-economic dynamics. However, the geographic distribution of the Moroccan migrant population and the consecutive wave that arrived in Belgium due to family reunification has evolved over the years. Specifically, this population has shrunk proportionally in Brussels, Limburg, and in Hainaut, while it has grown in Flemish and Walloon Brabant and in the province of Antwerp. In Limburg and Hainaut, this decrease in the 1970s and 1980s is due to the crisis in the mining and industrial sector (Schoonvaere 2014).

It is important to note here is that since Moroccans already have a long history of migration to Belgium, it is not always possible to make a clear distinction between persons of Belgian origin and (children of) the naturalized population on the basis of existing statistics in Belgium. This also results in an underestimation of the migrant population of people coming from these regions living in Belgium (Djait et al. 2011). Given that family reunification among Moroccan newcomers is still the main reason for migration in Belgium (Timmerman et al. 2017), we can assume that the new wave of migrants will largely go to the same locations as their predecessors. Second-generation Moroccans continue to settle in Antwerp, Vilvoorde, and Mechelen as well as in Brussels. Interestingly, while many Brussels municipalities continue to attract a strong concentration of the population of Moroccan origin, the second-generation Moroccan migrants seems to move to different municipalities in Brussels. Instead of Schaerbeek, Molenbeek, and Brussels, second-generation Moroccans tend to settle in the municipalities of Sint-Aghata Berchem, Jette and Ganshoren. This spatial relocation stem from the fact that the descendants of Moroccan migrants have

a better socio-economic situation than their parents and therefore want to leave certain disadvantaged neighbourhoods (Schoonvaere 2014).

To conclude, in contrast to the more organized migration of Moroccans at the European level, migration from Morocco to Belgium was initially a pioneering and individual project. However, these migrants did come from similar regions in Morocco as those going to other European regions (especially the Rif region and the Arabic northern provinces). Later, the Moroccan immigrant population increasingly spread to other regions in Belgium as well and continued to grow through family reunification and natural population growth.

## 3.2 Environmental Changes in Morocco

In the following sections, we look in greater depth at current climate or environmental changes and future climate change projections in Morocco. In addition, the consequences of these environmental changes in Morocco – which mainly affect agricultural activities – will be discussed. The focus on the actual consequences of such environmental changes on everyday life in Morocco is necessary to gain a better understanding of the problems that people face as a result of environmental changes and how this may impact their potential migration aspirations. Despite the fact that the environment/climate is constantly changing, in recent decades climate has changed faster and is expected to do so at an accelerating speed (IPCC 2014). As a result, not everyone is able to adapt to these new conditions from these changes. We also discuss here the adaptation strategies that Morocco as a state is already applying to deal with these climate and environmental changes and the future outlook, and reflect upon individual and household adaptation strategies that are used or will be needed to deal with detrimental effects of climate change.

### *3.2.1 Current and Future Climate and Environmental Changes*

Before we specifically focus on climate changes in Morocco, it is important to discuss the general trends in North Africa, which is part of the Mediterranean climate. The Intergovernmental Panel on Climate Change report (IPCC 2014) estimates that 22% of water shortages in the North Africa region in 2050 will be the result of climate change and 78% of water scarcity will be attributed to socio-economic issues. Furthermore, Bazza et al. (2018) observe that given 83% of agricultural land (7.2 million hectares) is not irrigated, yields of major crops suffer very significant variations due to the high variability of rainfall and a high frequency of droughts. As shown in Fig. 3.1 (IPCC 2014: 1265), there are negative precipitation changes at the beginning of the rainy season in October/November. In the period

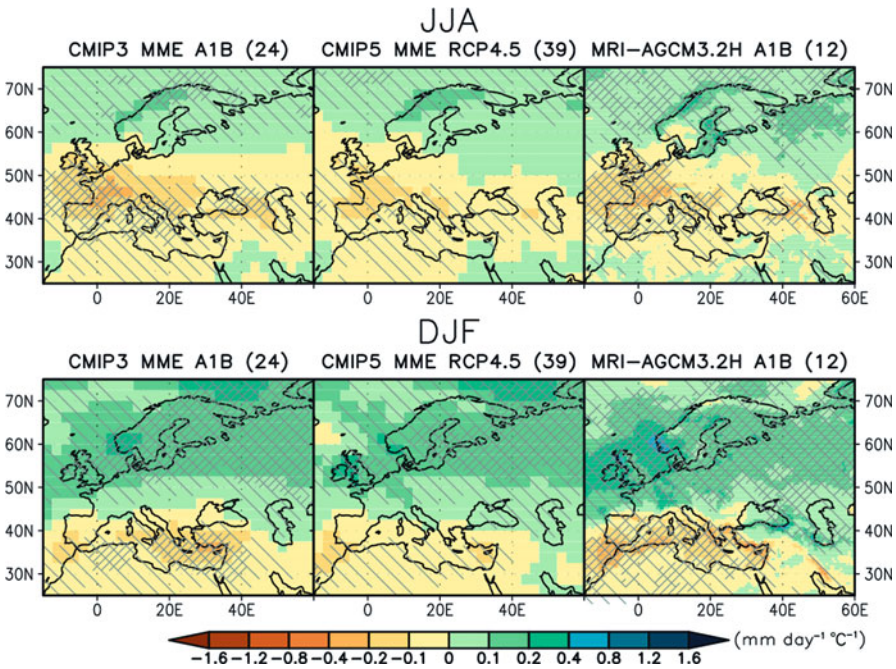


**Fig. 3.1** Maps of precipitation changes for Europe and Mediterranean. (Source: *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Intergovernmental Panel on Climate Change, p. 1265. Legend as formulated in the report: 'Maps of precipitation changes for Europe and Mediterranean in 2080–2099 with respect to 1986–2005 in June to August (above) and December to February (below) in the SRES A1B scenario with 24 CMIP3 models (left), and in the RCP4.5 scenario with 39 CMIP5 models (middle). Right figures are the precipitation changes in 2075–2099 with respect to 1979–2003 in the SRES A1B scenario with the 12 member 60 km mesh Meteorological Research Institute (MRI)-Atmospheric General Circulation Model 3.2 (AGCM3.2) multi-physics, multi-sea surface temperature (SST) ensembles (Endo et al. 2012). Precipitation changes are normalized by the global annual mean surface air temperature changes in each scenario. Light hatching denotes where more than 66% of models (or members) have the same sign with the ensemble mean changes, while dense hatching denotes where more than 90% of models (or members) have the same sign with the ensemble mean changes')

of December/January, however, there are substantial increases estimated. Subsequently, weak increases continue in some regions in February/March and the whole region is affected by drier conditions in spring (April/May). Throughout the year, the temperature assessment indicates a rise in the average temperature, with the largest warming rates in summer (June/July) and autumn (October/November) of partly more than 4 °C until the end of the twenty-first century. During the winter months of December and January, the lowest rate of warming is assessed with values up to around 1 °C. In addition, the study shows that the spatial warming pattern is mainly seen in the mountainous areas of the Atlas Mountains and is weakening towards the coastal areas of the Atlantic Ocean and the Mediterranean Sea (Schilling et al. 2012).

These scenarios developed by the IPCC are important for general forecasts and to assess climate changes in North Africa. However, for inhabitants of these regions, these climate change impacts can be very regional, depending on the geographic setting.

When discussing the observed and expected environmental changes in Morocco, we should note that Morocco is geographically located in a region at risk of global change (IPCC 2014; Nouaceur and Mursrescu 2016; Knippertz et al. 2003; Khattabi et al. 2014). It is situated between the dry regions of the western Sahara and the moderate Atlantic and Mediterranean regions (Born et al. 2008). Morocco's topography is highly accentuated and consists of two large mountain ranges, Rif and Atlas, that reach an altitude of 4165 m. The ongoing environmental changes in Morocco vary across regions, each with their different topography. The north consists mainly of coastal plains and lowland plateaus and is influenced by the Mediterranean and Atlantic climates. Generally, the climate of Morocco is characterised by hot and dry summers, with hardly any precipitation and strong evaporation, and by mild winters along the coastal strip, cold on the Atlas chains, Rif and Oriental highlands (Khattabi et al. 2014). This region deals with considerable climate variability between the Atlas Mountains and the coast. The south consists mainly of semi-arid grasslands and dry areas that merge with the Sahara (Khattabi et al. 2014; Climate Expert 2019). Over the past 30 years, Morocco has undergone various changes in the annual climate cycle that are particularly visible in the precipitation rates, average temperature levels, drought periods, and occurrence of extreme events in Morocco. These changes affect desertification and the growing of arid sand, groundwater flows, and salinization across Morocco (Schilling et al. 2012).

We will start with the *changing precipitation rates* to describe the ongoing climatic cycle in Morocco. Rainfall has high inter-annual variability (Driouech 2010). The average annual precipitation rates vary from less than 100 mm in the south and southeast to 1000 mm in the Middle Atlas and considerably more than 1700 mm on the Rif mountains. At the national level, the average annual amount of precipitation reached a decrease of around 15% in the period 1971–2000 compared to the national precipitation levels of 1961–1990. Subsequently, the years 1982–1983, 1994–1995, and 1983–1984 marked the worst droughts that Morocco experienced between 1971 and 2000. In fact, the existence of drought has been shown since the beginning of the last century and the presence of a cycle of drought in Morocco with an average periodicity of 11 years. Additionally, the frequency of drought periods as well as their intensity and duration have increased over the past three decades, leading to an increase in their temporal persistence, especially in spring. Hence, a slight increase in precipitation at the start of the rainy season and a decrease in the rest of the season (especially in the spring) was observed. This decrease represents approximately 25% of total rainfall in the rainy season in the northwest of the country (Benassi 2008).

Morocco has also been very vulnerable for extreme precipitation events (Tramblay et al. 2012). For about three decades, changing climate conditions, together with extreme events including recurring drought and heavy rainfall, have had a negative impact on the water flow (Benassi 2008). Precipitation levels and the frequency of wet days are projected to decrease throughout the country in the period

2021–2015 (Driouech et al. 2010). This decrease could be explained by a reduction of winter rainfall across the entire country. In the Atlas mountains, this decrease in rainfall could be applied to the wettest part of the year, ranging from October until March. At the same time, these changes in rainfall could also be due to the reduction in the number of wet days, combined with a falling number of heavy precipitation events and more persistent droughts (Driouech 2010). However, these projections could also be very regional given the distinct geographical zones in Morocco (Driouech 2010; Knippertz et al. 2003). For example, in the north-western region surrounding Tangier, Rifai et al. (2014), expect the climate trends to lead to more aridity with warmer and drier conditions. Overall, the changing precipitation patterns are expected to reduce average agricultural productivity in Morocco by around 30% by 2080. According to climate forecasts for 2030–2060, vegetables and grains in particular will be affected by less favourable growing conditions, which will decrease productivity by between 15% and 40% (Schilling et al. 2012).

Apart from these changing precipitation rates, trends show increasingly *higher temperatures in Morocco*. The spatial distribution of the intensity levels of heat wave danger also shows that a large part of Morocco has a relatively high temperature. This is crucial since the average global warming over the entire territory is about to change and estimated around 1 °C (Bouchaou et al. 2011; Born et al. 2008; Driouech 2010). Since the 1980s, there is a visible trend for more frequent droughts in Morocco and a clear shift towards warmer and drier conditions (Driouech 2010; Filahi et al. 2015). Furthermore, around the Sahara Desert, rising heat and drought leads to growing arid sand and ongoing desertification. Consequently, land that could be used for farming is now barren. For example, sand is found in areas that were once covered by date palms. There are also fewer places where nomadic herders can find suitable places for their animals (Freier et al. 2012). Roads are blocked by sand and dust accumulations so that areas that are difficult to access are even more enclosed. The same dunes may also cover arable lands and irrigation canals, which increases food insecurity. Human settlements – including homes, schools, dispensaries – suffer from the weight of the sand, which also disturbs local development (Ozer 2006). Additionally, the rising temperatures could result in a rise in the snowline in the Atlas range. This could impact the amount of water that can be stored in snow, reducing water available for domestic and agricultural use, especially at the start of the dry season thus adding to water scarcity. Finally, there are some links that can be made between drought, food security, and social instability in Morocco as well. This means that environmental changes increasingly interfere with the social and political organization of everyday life in Morocco and are not without impacts. This was for instance the case in Al Hoceima, in the northern part of Morocco, where riots erupted in 2008 after a year of losses in food production. Drought-related production losses were not the only factor spurring social disturbances as high global food prices and national policy also had an essential role in the outbreak of violence. Given the increasing urbanization and strong population growth, it is important to prevent price shocks and food insecurity (Esper et al. 2007; Schilling et al. 2012).

Other climatic changes, such as salinization, also impact agriculture in a profound way. Similar to other Mediterranean areas, groundwater in coastal areas is vulnerable to salinization, due to rising seawater levels related to global change. Events of extreme drought also cause salinization because rivers then carry insufficient freshwater towards the sea. Salinization renders water unsuitable for both drinking and agricultural use (El Yaouti et al. 2009). More specifically, it has been shown for Morocco that, within less than 20 years, irrigated soils can lose more than 50% of their productivity due to salinization. Salinization can therefore aggravate the negative effects of climate change considerably. Hence, soil erosion in general threatens the possibility of Morocco to adapt to climate change; 75% of arable land in Morocco is already affected by erosion (Schilling et al. 2012).

These climatic changes should be examined together with *ongoing developments and demographic changes* in Morocco. Coastal areas in particular are developing at a fast rate due to demographic pressure and tourism which adds to these areas' vulnerability to climate change (Carneiro et al. 2010). Sixty per cent of Morocco's population and 90% of its industrial activities and natural reserves are located along the extensive coastline. For instance, in Tangier, coastal erosion due to sea level rise is a major problem, impacting approximately between two and three meters per year. Furthermore, low-lying land is at risk of flooding due to rising sea levels, including the Nador lagoon, the Moulouya river, and the low-lying coastal plains of Oued Nekkor and Oued Laou. Indicatively, for Tangier Bay, a 0.86-meter rise in the sea level by 2100 would mean a loss of 99.9% of its port infrastructure and 63% of the city's industrial zone. These climate risks are worrying because the coast continues to attract people from drier areas, constantly increasing the vulnerabilities towards climate changes of people living in coastal areas as well (USAID 2016).

Summarizing, we can state that Morocco has been affected to a large extent by climatic changes and this is expected to continue in the future as well. Morocco is especially confronted with decreasing precipitation rates and increasing average temperatures with severe impacts on droughts, desertification, and arid sand accumulation. Additionally, more extreme events are occurring, such as floods. Finally, the rise of seawater levels also impacts groundwater and makes people living in coastal areas even more vulnerable to climate change effects. While the impact of these climate changes is hardly felt for agricultural activities in these regions, these changes need to be studied and considered together with changing demographic patterns and migrations, social conflicts, and economic trends. In the next section, we delve deeper into how the Moroccan state deals with such climate changes and tries to anticipate or prevent the detrimental effects for the population and the Moroccan economy.

### *3.2.2 Moroccan Adaptation Strategies to Deal with Climate Change*

Since agriculture constitutes a large percentage of the Moroccan economy, it is important to provide a general overview of the economic situation. In recent years the Moroccan economy has been characterized by macro-economic stability and a

low level of inflation. However, GDP growth has fallen since 2014 to 2.7% in 2019. This slowdown is mainly due to an unstable agricultural sector and slow growth in the tertiary sector. However, the economy was boosted by the good performance of phosphates, chemicals, and textiles. The IMF (2019) expects GDP growth to increase by 3.7% in 2020 and 4.1% in 2021 (NORDEA 2020). According to the IMF (2019), unemployment will also continue to fall, and this trend will continue over the next 2 years. However, unemployment will remain high (9.2%) in 2019. Moreover, it affects mainly young people, aged 15–24 years (26%). In addition, the poverty rate remains one of the highest in the Mediterranean, with 15% of the population living below the poverty line. Due to the richness of Moroccan soil, the economy is dominated by the agricultural sector (NORDEA 2020). In fact, this sector employs roughly 37.9% of the working population and contributes to 12.3% of GDP. The industrial sector contributes 25.9% to GDP and employs 21.6% of the labour force (IMF 2019). The main industrial sectors are textiles, leather goods, food processing, oil refining, and electronic assembly, however, new sectors are emerging such as chemicals, automotive components, computers, electronics, and the aerospace industry. This expansion into new sectors should enable the country to become less dependent on agriculture (NORDEA 2020). Finally, the service sector accounts for just under half of GDP (49.5%) and employs 40.5% of the labour force (IMF 2019). The service sector grew by 2.7% in 2018 and is led by the real estate sector and tourism, which remains very dynamic (NORDEA 2020). Because the GDP growth since 2014 has fallen to 2.7% in 2019, mainly due to unstable agriculture sector that is largely affected by climate change, it is important that Morocco as a state applies adaptation strategies to deal with these climate and environmental changes.

At the federal level, Morocco has several efforts to *mitigate climate change*. In the 2019 Climate Change Performance Index, or CCPI, (Burck et al. 2019), Morocco ranks second, after Sweden, in the fight against climate change. However, the first three rankings are traditionally left open because no country is found to make 'sufficient' efforts, suggesting that a lot more still needs to be done. The CCPI, which is published annually, is compiled by 350 experts in energy and environment and compares the environmental performance of 56 countries in terms of climate efforts each year. The index is based on 14 criteria and is grouped into four categories, namely greenhouse gas emissions, use of renewable energy, efficient energy consumption, and climate policy. Morocco ranks especially high on the 2019 list thanks to the development of renewable energies. In the last 5 years, for example, Morocco has considerably increased the share of renewable energy, building one of the largest solar parks in the world (Ouarzazate), with the help of development cooperation, while in 2014 Morocco opened the largest wind farm in Africa (Tarfaya). As a result, Moroccan efforts are often used as an example of how Sub-Saharan Africa can benefit from the highest solar radiation rates in the world (Burck et al. 2019). These examples and Morocco's rating on the climate change index, however, mainly illustrate the overall climate change mitigation efforts. For example, the Moroccan government has been performing well in terms of climate change mitigation efforts by focusing on large structural projects, such as the building of the largest solar panel parks and wind farms (Climate Expert 2019).

Apart from these mitigation efforts, people are already confronted with the consequences of climate changes, therefore *adaptation strategies* also need to be developed (IPCC 2014). One important element is how the Moroccan state as such already tries to deal with the impact of these environmental changes on people's lives and has developed particular adaptation strategies to do so. Although the concept of 'adaptation' is contextual and changes over time and across disciplines (Abbad and Idrissi 2019), in the context of the human dimensions of global change, 'adaptation' usually refers to a process, action, or outcome in a system – at individual, household, local, regional, and national levels – so that they can deal with, manage, or adapt to some changing condition, stress, danger, risk, or opportunity (Smit and Wandel 2006). To fully understand adaptation processes and the impact on society, it is important to distinguish adaptation by whom adjustments are made and according to the interests of the various stakeholders involved. This can range from individuals, local non-governmental organisations, development workers, or at distinct levels of governance. A distinction is sometimes made between planned adjustment, assumed to be implemented by governments on behalf of society, and autonomous adjustment by individuals (IPCC 2014).

In order to understand the impact of environmental changes on the ways it affects people's lives, we have to consider these environmental changes within the *wider societal context* and consider *the adaptive capacity as well as the developed adaptation strategies*. Hence, we will focus in this section mainly on the adaptation strategies developed by the Moroccan federal state, without ignoring the importance of individual or community-level adaptation strategies. Overall, the federal adaptation strategies pay a lot of attention to the variability of the climate change in Morocco. Since the mid-twentieth century, agricultural innovations related to harvesting, water resource management, crops, agricultural technologies, and so on, have been installed by the federal state. Special crop mixes and harvesting strategies are promoted by the Moroccan government to ensure resilience in rain-fed agriculture. With donor support, the government has undertaken large projects designed to bring safe drinking water to rural communities and informal settlements in urban and peri-urban areas. In addition, barley is used instead of wheat because barley needs less water and matures faster, and this has had a positive effect on the capability of the battle against water deficit. In southern Morocco, the traditional adaptation of agriculture to a semi-arid-to-dry climate is the extensive use of surface irrigation systems. To use the percolating water efficiently, irrigated fields are surrounded by trees such as apple, walnut, almond, olives, and date palms. Agricultural patterns have also changed considerably aimed at increasing grain production. More specifically, the use of nitrogen fertilizer, mechanization, and the intensive use of irrigation (surface water and groundwater) was promoted. Additionally, drought-sensitive wheat, Morocco's most important agricultural product in recent decades, was supported by many government initiatives in the mid-twentieth century (Schilling et al. 2012; Skees 2001); for example, a customs duty on soft wheat imports was reintroduced to bolster sales from the local harvest.

Water played and still plays a crucial role in Morocco's agricultural life (Chbouki et al. 1995). The water law introduced in 1995 decentralized integrated water

management and rationalization of water use came into force, including the principles of 'the user and the polluter pays'. The national water strategy includes action plans to reduce water demand, increase supply, and conserve and protect water resources to withstand water scarcity and pollution. This water law focuses on improving the efficiency of irrigation and urban supply networks and the pricing of water to rationalize its use. Plans to increase supply include the construction of more dams and a large North-South inter-basin water transfer (Schyns and Hoekstra 2014). Since rainfall is scarce and agriculture constitutes a large percentage of the Moroccan economy, dams clearly have many socio-economic benefits for Morocco. Particularly, dams have led to a sharp decrease in water and sediment fluxes from rivers to the coasts. During the last decade, the recurrence of droughts has exacerbated the reduction of water flows in and below reservoirs. By reducing the supply of rivers, dams can also influence the morphological balance of the coastline. However, a great deal of doubt has been expressed about the long-term durability of these dams due to the high speed of natural and man-made soil erosion as well as their limited design capacity and short life (Snoussi et al. 2002). For the southern regions of Ouarzazate and Tafilalet, the use of groundwater for irrigation is still free of charge. Surface-water management projects in Morocco led to a devaluation of traditional water management by transferring power over water resources from local to national authorities. This encouraged farmers to switch their irrigation systems to groundwater supply. However, this has led to a decline in groundwater tables that has already reduced yields in some areas (Heidecke et al. 2010). In addition, inadequate irrigation techniques have led to increasing salinization in Morocco which, in turn, also impacts environmental changes (Schilling et al. 2012).

Apart from these water laws, attention has also been given to overall agricultural development. Since 2008, the Moroccan government has released a new and promising agricultural strategy called 'Plan Maroc Vert' in the country's 16 regions (El Bilali et al. 2012). This new approach was necessary as the country's economic development since the early 1990s has reduced the relative contribution of agriculture to GDP by an average of 16% in the period spanning 2000–2010. Partly as a result of this, the Plan Maroc Vert was founded on growth, poverty reduction, the agricultural sector's long-term sustainability and consolidation of its integration into national and international markets. It also seeks to increase socio-economic benefits in terms of investment, job creation, and improved farmers' incomes for the Moroccan population (Balaghi 2014). The Plan Maroc Vert's strategy is based on two pillars. The first aims to promote modern agriculture with high added value, adapted to the markets. The second pillar strives to improve the agricultural income of small-scale farmers in order to combat poverty. Various measures are being taken to increase agricultural productivity by as much as 59% by 2020; these include intensification of production, expansion of arable land, improvement of localized irrigation, institutional innovations, and improved processing of products. As part of this plan, several fruit trees are currently being planted in areas where cereals are unsustainable with a target of around 1 million hectares by 2020. The plantations are designed to improve farmers' incomes and reduce land degradation, through optimum fertilization, collection of rainwater, additional irrigation and conservation of soils against erosion (Balaghi 2014).

Plan Maroc Vert has supported the development of various agricultural value chains and improved the development prospects of many companies. This agricultural policy tends to deal with regional needs and different agricultural challenges but in general also aims to transform the countryside through better economic performance. In practice, the focus is broadly on improving agricultural production. During implementation of Plan Maroc Vert, farms are primarily seen as a way to develop agricultural value chains and increase agricultural production before 2020. Real farms, together with their farmers and rural areas, faded into the background. However, this could undermine the Plan's ability to achieve widespread improvements at the level of farms, agricultural chains, and territory (Faysse 2015). During the same period of 2010–2012, the Moroccan Meteorological Office also implemented various programs to address concerns about the impact of extreme weather conditions through policies to prevent them. Special importance in these programs is attached to actions to better estimate climate variability and associated water resources (Benassi 2008).

Finally, other adjustments can be made by governments on behalf of society, such as adapting building codes to future climate conditions and extreme weather events, building flood defences and raising the levels of dykes, developing drought-tolerant crops, and choosing tree species and forestry practices less vulnerable to storms and fires (Adger et al. 2003). Given the history of water wars and issues with water management, newly developed adaptation strategies have to deal with both the additional pressure put on existing water management by climate change and existing issues with water management (Chbouki et al. 1995; Moumni et al. 2019). Water management is important to consider in a Moroccan context, given the large investments made in the building of dams. The impacts of global warming will interact with water management and lead to changes in irrigation areas, and consequently, to agricultural production as well (Khattabi et al. 2014; Aoubouazza et al. 2019). Overall, these levels of decision-making are embedded in social processes that reflect the relationship between the state and individuals and their networks, capacities, and social capital (Adger et al. 2003).

When discussing these policies, it is important to note that the development of these plans is not necessarily the same as the actual implementation of the initiatives by local communities. Ensuring environmental protection or promoting sustainable development in different sectors requires an appropriate status, which provides a broader capacity for initiating and facilitating inter-ministerial and inter-sectoral cooperation. However, the status of the current environmental authority appears to be too low and dilutes the enforcement of environmental legislation. As a result, not all regions of Morocco are fully represented, and the presence of environmental authorities is often too weak for the effective implementation of its mandate (United Nations 2014). It is therefore necessary to further strengthen the governance structures, which form the basis for coherent and participatory implementation. Subsequently, it is also necessary to broaden ownership at the provincial and local levels in order to enable effective implementation of the various policies to contrast climate change (NAP-GSP 2017).

To conclude, we can state that Morocco has faced intense climatic and environmental changes over the last decades. The Moroccan government has performed well in terms of the development of climate change mitigation policies. Regarding climate change adaptation strategies, large investments in specific regions have focused on agriculture and water management and control. These efforts have been accelerated by the introduction of the Plan Maroc Vert in 2008 to promote modern agriculture with the aim of reducing poverty by focusing on small-scale farmers. Although the efforts in Morocco to reduce and adapt to climate/environmental changes may be relatively high compared to other countries, the question remains to which extent these efforts are felt by the local population and how these efforts impact the existing local social structures and migration patterns.

### *3.2.3 Individual and Household Adaptation Strategies to Deal with Climate Change*

Rapidly changing natural environments are heavily felt by Moroccan inhabitants of distinct regions. Nevertheless, these changes are especially felt by people working in the agricultural sector who are highly dependent on water availability and rain availability (Born et al. 2008; Khattabi et al. 2014). The agricultural sector is important for the Moroccan economy and contributes 15–20% of the GNP and accounts for one-third of Moroccan exports (De Haas 2006). The importance of water availability has been repeatedly shown in the past, when several regions in Morocco suffered severely from water scarcity, which threatened the livelihoods of people working in agriculture or living from pasturing to a large extent (Born et al. 2008). Since individuals are vulnerable to climate risks and other factors, this vulnerability can act as a driver for adaptive resource management. The impact of climate change on Moroccan life will mainly be felt through economic activities such as agricultural activities and tourism (Khattabi et al. 2014; Ait Houssa et al. 2017; Adger et al. 2003; Aoubouazza et al. 2019). Climate change will impact cropping and livestock systems in various ways. Each type of climate change impact – i.e., temperature rise, changing and more extreme precipitation rates, sea level rise, and so on – will demand or force a restructuring of current agricultural activities. For instance, due to global warming crops like bananas and avocados would be easier to grow in more continental regions compared to olive and citrus trees that are expected to move towards the foot of mountains. Additionally, this could replace the drought boundary in Morocco. Moreover, to adapt to changing precipitation rates, water -intensive crops such as rice and sugarcane could be replaced with highly efficient and more lucrative crops (Ait Houssa et al. 2017). Adaptation strategies of individuals such as the purchase of other cereals or crops, installation of water pumps, the search for other professions or moving, can thus be a response to climate threats (Adger et al. 2003; Ait Houssa et al. 2017). As a final remark – in line with the migration-as-an-adaptation discourse (Gemenne 2010) and following ideas from the new economics of labour migration and migrant systems

theory (cf. Chap. 2) – migration can be seen as a potential adaptation strategy for individuals and households to deal with environmental changes. Since migration is the main focus of this book, we discuss this in more depth in the following section.

### *3.2.4 Environmental Migration and Displacement in Morocco*

As mentioned earlier, migration can be seen as an adaptation strategy to deal with environmental/climate change (Gemenne 2010). There are three main reasons for which migration can be seen as a potential adaptation strategy. First, the population may perceive migration as a possible adaptive response to risks associated with environmental changes. Hence, environmental migration can be seen as one of the strategies by which people who perceive themselves to be at risk or are experiencing the impacts of climate change may seek to adjust and adapt (Black et al. 2011; Gemenne 2010). Second, migration can play an important role in the adaptation towards environmental change as it reduces demographic pressure of people on the natural environment. For instance, at the most basic level, migration can lessen strain on limited resources while alleviating other risks related to overpopulation, thus offering those who stay better chances for survival (Gemenne and Blocher 2017). Third, migration can establish flows of financial and other resources (Gemenne 2010). Remittances directly increase the family income and living standards of the recipient with indirect effects on human capital formation through education as well as on the investment ratio (Rao and Hassan 2011).

When examining the relationship between environmental changes and migration and displacement in Morocco, we must consider both environmental changes and migration dynamics. Among developing countries, African nations are most intensely affected by current climate variability and future climate change. Due to low resilience and limited adaptability to climate-related shocks and stress due to widespread poverty, extensive disease burden, and political instability, Africa is considered particularly vulnerable to the effects of climate change and climate variability. Despite the global recognition that climate change is taking place, there is still no clarity about how this affects people's living conditions. As a result, the consequences of future climate scenarios, such as migration flows and livelihood processes, are highly speculative (Williams and Kniveton 2011). This is no different for Morocco. Previous research has already shown a number of important elements that we must take into account when it comes to environmental migration in Morocco. In the next section, we therefore discuss which factors can contribute to migration patterns in Morocco. Next, we look in more detail to the fact that the inhabitants of the most-affected regions usually have the fewest opportunities to migrate due to climate change. In addition, there appears to be a lot of internal migration in Morocco, which is also typical for climate migration. Finally, we conclude with the consequences of existing migration for environmental migration.

Research from Wodon et al. (2014) shows that although climate change is not the main driver of migration in Morocco, it does seem to contribute to it – and worsened

climatic conditions are likely to aggravate future migration flows. Furthermore, there are three specific related issues: the impact of weather shifts on migration, the impact of perceptions of recent climate change on migration, the impact of climate patterns on migration (Wodon et al. 2014). Environmental factors therefore put all other migration reasons under pressure, yet little empirical research has been done into the ways in which they respond to each other. Ever since the first migrations from Morocco, many regions of origin were already confronted with scarcity and drought. These migration flows affected and reduced economic opportunities within Morocco and could have shaped further migration aspirations and patterns. For instance, through the organization of large-scale labour migration, many Moroccans were able to migrate and support their livelihood and that of their family (De Haan 2000). However, inhabitants of regions affected most by climate change usually have the least opportunities to migrate.

When looking at the areas with the highest numbers of migrants in general, these areas are not among the most marginal and poorest areas (McLeman and Gemenne 2018a). Rather, in Morocco, sedentary farming populations or relatively open areas with better connections to the outside world participated more and more intensively in international migration than sedentary and nomadic or semi-nomadic people who lived in relatively remote areas in the Atlas Mountains, steppes, and deserts. This shows that people from coastal areas in Morocco participated considerably more in international migration then people from inland areas. People from areas in the 'margin of the margin' tend to migrate less or rather internally (De Haas 2005, 2007). Subsequently, people with the lowest socio-economic status in the sending communities migrate the least, because they cannot afford the costs and risks and often lack the aspirations and knowledge to migrate (Zickgraf 2018). Thus, despite the high levels of international migration from Morocco, internal migration remains more important in numerical terms (De Haas 2005). This is important to note as many of the migration trajectories – transnational or not – due to environmental changes are fragmentary in nature (McLeman and Gemenne 2018a, b). Hence, most environmental migration in Morocco will probably also be limited to internal movements; it is very likely that urban areas will be the most important destinations. Previous studies mainly point to the enormous importance of migration from the Moroccan countryside to the city and to the crucial function of internal migration as a precursor to international migration (De Haas 2007; Noin 1970; Reniers 1999). A rising number of internal migrants in Morocco do not settle in large cities but in fast-growing small and medium-sized cities close to or within the rural provinces themselves, such as Nador and Al Hoceima in the north, Agadir and Tiznit in the southwest, and Ouarzazate in the south. Numerous smaller, but fast-growing cities have emerged at the regional level. There are substantial indications that urban-oriented consumption and investment of remittances in homes and private companies – e.g., shops, trade, hotels, coffee houses, crafts, transport – by international migrant households have accelerated the growth of medium-sized and large cities (De Haas 2005). In particular, people with a low socio-economic status are limited to migration leading to an 'immobility paradox' because migration requires a minimum level of resources. As a result, international environmental migration

drops immediately after extreme weather conditions, but internal migration increases because affected households cannot afford long-distance travel (Wodon et al. 2014). But as there are already a lot of migration flows from Morocco to Belgium in different ways (labour migration, family reunification), mostly for better economic opportunities, a whole migration culture already exists in Morocco that can have an impact on environmental migration in Morocco.

Morocco's inhabitants are already experiencing deteriorating environmental conditions and shocks that could endanger their livelihoods. Shifts include a decrease in precipitation, increasing risks of drought, more dry areas towards the north of the country, and less groundwater (Wodon et al. 2014). According to the EACH-FOR study (2008) there will be a sharp fall in agricultural output, particularly in the north and midwest, where rainwater-based agriculture is currently prevalent (Wodon et al. 2014). This can lead to uncertain decreases in irrigation-based agriculture. In a country where 40% of the population is employed in agriculture and where nearly 70% of the poor live in rural areas, such environmental shocks and the resulting decline in agricultural production have a negative impact on the livelihood of many people. This can create migration movements. Moreover, Morocco has 3500 kilometres of coastline, which means that an increasing number of floods and rising sea levels also can cause future migration movements (Wodon et al. 2014). However, information is lacking on how households in vulnerable areas perceive changes in the climate and how they are affected by extreme weather events. Wodon et al. (2014) say there is evidence that households leave these areas affected by drought. For example, after a severe drought, two-thirds of the irregular migrants arrested in Spain in 2007 were from the farming and mining region of Khouribga (EACH-FOR 2008). Another study found that environmental degradation was one of the reasons leading to past or intended migration (Hamza et al. 2009). These findings, however, are difficult to generalize as the studies were localized and based on small samples (Wodon et al. 2014).

To summarize, when it comes to environmental migration and displacement in Morocco due to environmental changes, most environmental migration in Morocco will probably be limited to internal movements. Consequently, international migration from Morocco will largely come from areas that are not among the most marginal and poorest areas. Nevertheless, the empirical evidence from Morocco and more broadly on the impact of climate change and extreme weather events on migration remains limited.

## 3.3 Conclusions

Until the beginning of the twentieth century, there was hardly any migration from Morocco abroad. Moroccan immigration to Europe began as labour-related migration for the coal mines. After the migration stop in 1973, immigration from Morocco, which was just a young migration movement, continued in the form of family reunification and family formation (De Haas 2005, 2007). The Moroccan state saw

benefits in migration flows to Europe and pursued a policy to make it easy to send money, making migration very important for the country's development (Kapur 2005). Therefore, a new monetary policy has been pursued in Morocco since the late 1980s, with no restrictions on currency exchange and the repatriation of money (Refass 1999).

Over the past decades, many environmental changes are noted in Morocco that are expected to aggravate or continue in the future. Shifting precipitation patterns and drought, salinization, desertification, and extreme events in Morocco have the potential to contribute to instability and social inequality. Such changes have different consequences for the local population and may have an impact on the reasons for migration (Benassi 2008). For example, the changing precipitation patterns are expected to reduce average agricultural productivity in Morocco around 30% by 2080 (Schilling et al. 2012). Due to ongoing desertification, land that could be used for farming is now barren; for instance, sand is found in areas that were once covered by date palms (El Yaouti et al. 2009). Salinization also reduces agricultural productivity and makes groundwater unpotable, while coastal erosion due to sea level rise is a major problem that can cause extreme events (Schilling et al. 2012).

The Moroccan government has been performing (relatively) well in terms of climate change mitigation efforts (Burck et al. 2019). With regard to climate change adaptation strategies, large investments have been made in particular regions with emphasis on agriculture productivity and water management and control. Less attention has been given to adaptation strategies and policies, apart from the water law in 1995 that focused on a decentralized policy on water resource management in which both user and polluter pay (Schyns and Hoekstra 2014) and the introduction in 2008 of the Plan Maroc Vert across all 16 regions to contribute to agricultural development and reduce poverty by utilizing a regional approach (El Bilali et al. 2012).

Despite the large migration flows and visible environmental changes, the lack of reference made to environmental factors influencing migration patterns may be due to the largely organized migration trajectories and active recruitment of many Moroccans to work in Europe. This does not necessarily mean that environmental factors have been largely absent in the decision to migrate to Europe, and specifically Belgium. Although environmental changes in Morocco are not (perceived as) the main driver of migration, these worsened climatic conditions contribute to these flows and are likely to swell future migration flows (Wodon et al. 2014). Environmental factors therefore put all other migration reasons under pressure, but so far there has been relatively little empirical research in Morocco into the ways in which they respond to each other. Information is lacking on how (vulnerable) households in vulnerable areas perceive changes in the climate and how they are affected by extreme weather events. Therefore, in this book we would like to illustrate how environmental changes have already urged people to migrate over the last decades and how these processes continue to play a role in newly-emerging trends of environmental displacement and migration.

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# Chapter 4
# Research Context and Methods


## 4.1 The MIGRADAPT Project

This book contributes to wider research efforts undertaken under MIGRADAPT, which stands for: Making Migration Work for Adaptation to Environmental Changes. A Belgian Appraisal.[1] This project is funded by the Belgian Science Policy Office (Belspo) and is a joint collaboration between four Belgian institutions: Liège University's Hugo Observatory (Coordinator); Université Libre de Bruxelles's CEDD (Centre d'Etudes du Développement Durable), University of Antwerp's CeMIS (Center for Migration and Integration Studies); and the Royal Museum for Central Africa.

The MIGRADAPT project has two main research objectives. The first is to examine the role of the environment as a driver for migration from Morocco, Senegal, and the Democratic Republic of the Congo (DRC) to Belgium. The second objective is to gain a better understanding of the conditions under which migrants in their country of destination – Belgium – can support the adaptation and resilience of their communities of origin. Qualitative research for this investigation has been conducted in Senegal, the Democratic Republic of Congo, Morocco, and Belgium. By focusing on both migrant-receiving and migrant-sending countries, this transnational research aims to examine the migration trajectories of migrants on their way to Belgium and to determine the extent to which environmental stressors play a role in their aspirations, journey, and subsequent transnational practices. This study design enabled the research team to examine and include 'fragmented journeys' of migrants, internal migration (partly) due to environmental changes, and immobile groups. Building from this wider research framework, this book seeks to leave both the Senegalese and Congolese contexts aside and zoom into the Moroccan situation through the presentation of research findings stemming from empirical work conducted with populations currently living in Morocco, on the one hand, and

[1]MIGRADAPT project https://www.hugo.uliege.be/cms/c_4866216/en/hugo-migradapt



L. Van Praag et al., *Migration and Environmental Change in Morocco*,
IMISCOE Research Series, https://doi.org/10.1007/978-3-030-61390-7_4

Moroccan migrants in Belgium on the other. By doing so, we demonstrate that the inclusion of multiple perspectives and vantage points is critical to provide a comprehensive understanding of the transnational dynamics that connect populations in their places of origin and destination, particularly in the context of environmental change.

## 4.2 Research Context in Morocco

As already set out in Chap. 2, it is often understood that climate change intensifies existing risks by acting as a 'threat multiplier' (Zickgraf 2019) – especially in regions that suffer from water scarcity – and is linked to the creation of new opportunities aimed at the improvement of land and water management in the Northern African region (Iglesias et al. 2011). Within the Northern African region, Morocco occupies a special position because of its high sensitivity to climatic changes and its limited adaptive capacities (Schilling et al. 2012; Wodon and Liverani 2014). Despite the observation that the study of environmental migration is still in its infancy in Morocco, the topic of environmental and climate change is very relevant for this area and well-known to policymakers. Similarly, numerous geographers, anthropologists, and sociologists have studied water and land resources and management (De Haas and El Ghanjou 2000; Kuhn et al. 2010), perceptions on extreme weather events and shocks (Wodon et al. 2014), vulnerability and adaptation (Schilling et al. 2012; Sowers et al. 2011), remittances and emigration (De Haas 2003, 2006; Kusunose and Rignall 2018), desertification (Bentaleb 2015), transitory migration flows and climate change (Sow et al. 2016), and the sustainability of oasean systems (Karmaoui et al. 2015). This existing literature makes the Moroccan case interesting to study and explore further.

Fieldwork was conducted under the MIGRADAPT research project to collect qualitative empirical data that would shed light on the unavoidably complex linkages between migration and environmental changes. As explained earlier, this research project focuses on how migration could actually work for adaptation towards environmental/climate change and indeed does with respect to migration to Belgium. It is in this regard that Morocco was selected, amongst other countries (namely Senegal and DR Congo), as a field of research, given the numerical and societal importance of the Moroccan diaspora in Belgium. This conceptual connection between the Belgian and Moroccan cases – which is inherent to the MIGRADAPT project – materializes in this book's penultimate chapter. It must however be stressed that the chapters respectively focusing on Morocco and on Belgium do not entirely overlap and that this somewhat weak connection is already an important finding in itself. While many people migrated from Tinghir towards Belgium (and France), the share of migrants coming from this region is relatively small in Belgium compared to those coming from other Moroccan areas. This suggests the existence of fragmented journeys or that people moving due to environmental factors often do not necessarily migrate far unless they have extensive migrant networks to make this migration trajectory work, concealing the actual environmental drivers of migration. While

many interesting research sites could have been selected within Morocco given the country's overall vulnerability to climate/environmental change, we opted in the MIGRADAPT project for a theoretical sampling procedure to select our research locations in Morocco. The combination of migration factors was especially relevant here as many environmental changes in Morocco are felt in a gradual way. The interactions between environmental changes, population growth, and technological changes could indeed lead to, or be associated with, out-migration from these regions in Morocco. We based the selection of our two research locations – Tangier and Tinghir – on three criteria.

The first is the *variation in vulnerability levels and the differentiated impact of climate change for the local population* (distinct types of vulnerability to climate change). Vulnerability to climate change is dependent on levels of (i) exposure to climate change, (ii) sensitivity to climate change, and (iii) adaptive capacity (Heltberg and Bonch-Osmolovskiy 2011). A second criterion was to select regions that had witnessed *considerable out-migration flows to Europe* and/or to other Moroccan regions. It was further decided to focus on one rural area experiencing labour surplus (Tinghir) and one urban area with an increasing demand for labour (Tangier) to add to a better understanding of how migration within and outside Europe works (cf. functionalist theories of migration). Third, in order to build further on existing research findings and reports, we opted to select regions in which research on migration had previously been carried out. As such, both Tangier and Tinghir had already been studied as part of the EUMAGINE project[2] (coordinated by the Centre for Migration and Intercultural Studies, University of Antwerp) which looked at migration aspirations of people living in Morocco without focusing however on environmental factors (cf. Berriane et al. 2010, 2012). Nevertheless, this project's papers and findings provided useful information about the research context. Based on these three criteria, two areas were selected for this research in Morocco: Tinghir, located in the Todgha Valley in the High Atlas, and Tangier city, located in the Rif region.

The combination of high immigration and emigration and environmental changes in both regions made both cities particularly interesting to study. With regards to vulnerability to climate/environmental changes, the overall consequences of environmental changes in the Atlas mountain region pertain to precipitation and temperature changes, which especially affect agricultural activities. This contrasts with Tangier, which is characterized by a Mediterranean climate and where many people rely on industries and the harbour (Berriane et al. 2010), resulting in a very distinct pattern of opportunities and constraints for people to secure their livelihoods and deal with environmental changes. Although Tangier and its region may be less confronted with environmental changes because the city is an international industrial hub, it hosts a large proportion of internal migrants who came from other regions of Morocco, potentially in part due to environmental changes. The selection of Tangier therefore allowed the study of 'environmental' migrants' fragmented journeys and

[2] http://www.eumagine.org/pages/eumagine_country_details.aspx?cid=1

consider the internal migration flows occurring within Morocco. Both regions are not necessarily those from where most Moroccans living in Belgium originate, mainly the Rif (Nador, Al Hoceima, Oujda, Tétouan) and Souss (Tiznit, Agadir, Taroudant, Ouarzazate) regions (cf. Chap. 2). Nonetheless, a substantial proportion of Moroccans in Belgium are from Tangier and Tinghir. The migration history of these regions can help explain the development of climate change discourses and the injection of policy debates held in Europe. Both cities are characterised by a long, but distinct migration history, and are both sending and receiving regions for internal migration in Morocco, albeit at a different scale (cf. Berriane et al. 2010).

Finally, this book does not only focus on the experiences of people living in Morocco but also on those of Moroccan immigrants living in Belgium. Respondents from the Belgian sample were mainly selected in the cities of Brussels and Liège. In the following sections, more information is provided on the selected sites (both in Morocco and Belgium) in which this research was conducted, on the research methods used, and on associated challenges encountered on the field. An account of the main researcher's positionality and reflexivity will also be provided.

### *4.2.1 Tangier, the Gateway to Europe*

Due to large flows of transit migration over time, the city of Tangier provides an important site of investigation (Berriane et al. 2010). In 2014, approximately 947,952 people lived in Tangier (RGPH 2014). This region is characterised by diversified economic activities and by surrounding villages that have adopted a collectivist model of social organisation. Recently, there has been a strong political will to invest in large infrastructure projects in Tangier, such as the extension of its port and road and rail infrastructures. This has resulted in a rapidly expanding and modernizing city, which has proven very attractive for internal migrants. In particular, Tangier hosts many migrants coming from the Rif area (Berriane et al. 2010) who may have been affected by the impact of increased precipitation and drought (Niang et al. 2014). Recently, a larger number of people originating from Sub-Saharan countries – whether in transit or not – pass through Tangier. This city sparks the imagination of those who dream of Europe due to the large number of boats making the crossing to Spain via the Strait of Gibraltar and because of the proximity of the Spanish enclaves (particularly Ceuta). In addition to these official routes, both in Tangier and in regions surrounding it, there are large human smuggling networks. Over the last years, the Strait of Gibraltar has lost its role as the main route towards Europe. Finally, it should be noted that the city hosts many transit migrants who eventually end up staying permanently (Carling 2007; Simon 2006). The city of Tangier is subdivided in very distinct quarters, all attracting different residents – international communities, 'Tangeriens', and neighbourhoods that attract internal migrants – and also has a large industrial zones.

### 4.2.2 *Tinghir, in the Foothills of the Atlas Mountains*

Selecting the oasis city of Tinghir as a research site in Morocco can be explained by its high emigration rates over the last century (De Haas and El Ghanjou 2000; De Haas 2006; Kusunose and Rignall 2018), its high sensitivity towards environmental change, and its limited adaptive capacities – the latter being further aggravated by the lack of sustainable policy responses and agricultural practices (Schilling et al. 2012). Finally, the water management and control of Tinghir has been subject to many water wars, laws, and customs (De Haas and El Ghanjou 2000). This region in Morocco provides an interesting site of investigation, in which previous migration and adaptation strategies could play a pivotal role in the migration aspirations due to environmental change. Because both migration and vulnerabilities to environmental change are socially embedded, migration aspirations can vary across different segments of the population.

Tinghir is located in the Drâa-Tafilalet region, in the south of the High Atlas and north of the Little Atlas in south-eastern Morocco. In total, 42,044 people lived in the municipality of Tinghir in 2014 (RGPH 2014) and is mainly populated by Amazighs (or Berber) ethnic groups, who are mainly Muslims. The city of Tinghir is built up surrounding a river's oases, with palm, olive, fig, pomegranate, almond and other fruit trees, as well as (small) wheat and alfalfa fields in the Todgha basin. The local economy was initially based on self-sufficient subsistence agriculture. The source of the river departs from the nearby town, Tamtatoucht, and is used, through a precise irrigation network of open-air water canals and water laws. Water use and the opening of the sideways water canals is highly controlled. Due to water scarcity, permanent cultivation, and customary water and land rights in the oasis, the irrigation pattern of the fields is carefully managed and organised by village communities (De Haas and El Ghanjou 2000; Rössler et al. 2010; Bentaleb 2015).

Depending on their location in the valley (Fig. 4.1), inhabitants face water scarcity to varying extents and cope with it differently. In the lower Todgha valley in particular, surface irrigation water is scarcer, urging agricultural workers to use water wells, diesel pumps (De Haas 2006) or even solar water pumps to intensify production and be able to continue their agricultural activities. A dam is currently under construction near the water source in Tamtatoucht. This region's inhabitants are confronted with various environmental issues, such as decreasing precipitation, river pollution (e.g., washing, lack of sewage system), the erosion of riverbeds and river canals, the lack of modern agricultural techniques, and the fragmentation of land through heritage and lack of juridical regulations, upcoming desertification and sand from nearby deserts, and the degradation of land and biodiversity (Bentaleb 2015). These issues complicate agricultural activities and further investments in this area.

Over the last years, a lot of changes have occurred as a result of successive years of drought, urbanisation processes, and the diversification of economic activities. Changes in precipitation and temperature are mostly felt in mountainous regions, and especially by people relying on agricultural activities. Over the course of the

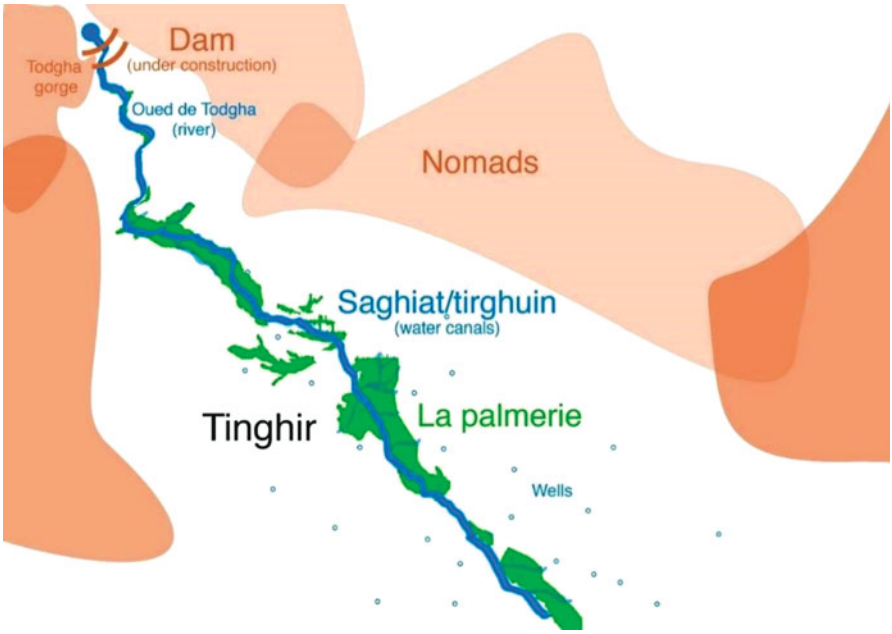


**Fig. 4.1** Tinghir and the surrounding oasis

years, the valley has progressively become marginalized due to a strong rural exodus and brain drain towards big cities and foreign – mainly European – countries. Whilst, especially between the 1960s and 1970s, labour migration schemes were put in place to send the region's inhabitants to European countries such as Belgium and France, emigration is still ongoing. Male migrant workers were recruited from all social backgrounds, though more often from extremely poor families. Remittances from migrant workers living in Europe were mainly used to invest in Morocco's 'new' economy, in which remittances are invested in small businesses such as the construction trades, local transportation services, or civil service positions that resulted from increased investments in vocational training, secondary education, and business ownership. Moreover, this accelerated households' move away from the 'old' economy, which was based on land and livestock ownership (Kusunose and Rignall 2018). At the same time, the municipality of Tinghir itself attracts also a lot of immigrants from the wider surroundings (De Haas and El Ghanjou 2000), and nowadays even hosts many retired return migrants that decide to spend time in both their region of origin and Europe as a compromise between their two 'home' countries (De Haas 2006; Kusunose and Rignall 2018).

## 4.3 Research Context in Belgium

As demonstrated in Chapter Three, Belgium has been a crucial immigration country for Moroccan populations since the rollout of the bilateral agreements tying Western Europe and Morocco from the late 1950s until the 1970s as a way to tackle labour shortages in the industrial, mining, construction, and agriculture sectors. Labour migration from Morocco to Belgium ran uninterrupted until the oil crisis in 1973, after which the predominant trend of Moroccan immigration to Belgium shifted from labour migration to family reunification. Although Moroccan immigration to Belgium has been the object of many studies (Bousetta and Martiniello 2003; Ouali 2004; Martiniello and Rea 2013; Zickgraf 2014; Timmerman et al. 2017), the MI GRADAPT project, which is funded by the Belgian Science Policy Office (Belspo), is a unique study of the interlinkages between populations in three emigration countries – the Democratic Republic of the Congo, Morocco, Senegal – and Belgium. It is particularly innovative in the sense that it seeks to investigate the role that environmental changes and disruptions in these three countries may have played in migration journeys to Belgium, particularly through impacting other traditional migration drivers such as socio-economic.

Belgium is a particularly interesting transit/host country to examine in the framework of a transnational project. Indeed, Belgium hosts several generations of Moroccan immigrants, mainly in its capital, Brussels. According to the Brussels Institute of Statistics and Analysis (IBSA), Moroccans constituted are the third-largest group of foreign nationals (representing 9% of the total foreign population) in Brussels in 2018, after the French (15.2%) and Romanians (9.5%) (IBSA 2018). The city of Brussels in particular hosts many migrants from Tangier, which is one of the two cities studied within fieldwork in Morocco. This allows some comparability across findings in both countries, making it possible to appraise the role of migration aspirations and transnational networks (for instance, why Moroccans would choose Belgium over other destinations) and how diaspora members in Belgium keep transnational ties alive with their family or community of origin.

## 4.4 Research Methods in Morocco

The data collection and analysis phases followed a Grounded Theory approach (Glaser and Strauss 1967), and especially used these principles to select the research setting and cases with theoretical sampling; the constant comparative method was used to analyse the data thematically. In the sections below, more detailed information about the actual data collection and analysis phases is provided.

### 4.4.1 Data Collection and Analysis

Qualitative interviews were conducted with people living in Tangier and Tinghir (Morocco) between March and May 2018 by Lore Van Praag. Theoretical sampling criteria for the selected respondents in Morocco were (1) access to migrant networks or migration experience (both those who have and those who do not); (2) age (+18 years old); (3) gender (balance between females and males); and, (4) socio-economic status (variation). A snowball technique was used to recruit the respondents.

To include sufficient people with migrant networks, respondents were selected through connections of immigrants living in Belgium (or other European countries), especially in Tangier. People in the network of the researcher and the broader MI GRADAPT research team were asked to participate and share, upon their consent, the contact details of their relatives, friends, or acquaintances living in Tangier or Tinghir. A second group of respondents were contacted during the fieldwork in Morocco itself, through associations, Facebook posts, contacts obtained through housekeepers, tourist guides, and local conferences. Over the course of the fieldwork, more specific selection criteria were added to obtain a more varied sample based on the initial theoretical sampling criteria. In particular, special attention was given to the recruitment of women and respondents with a relatively lower socio-economic background. Most appointments were made via Whatsapp, through a local Moroccan number, or in person. Both informal and formal interviews were considered and recorded, whether electronically or manually. While formal interviews were audio-taped, informal interviews were carefully noted down after the interview but not recorded. In total, 13 formal interviews, 3 informal interviews, and 2 expert interviews were conducted in Tangier (18 in total), and 24 formal interviews and 6 informal interviews in Tinghir (30 in total). Out of the 48 interviews conducted, 21 were with female respondents and 27 with male respondents. Age variation ranged from 21 to 70 years. All interviews were transcribed and translated from the respective languages (French, Spanish, and Dutch) into English by the author. All names were replaced by pseudonyms to maintain respondents' anonymity. Fieldwork and interviews were sometimes challenging due to gender issues, translation biases, and fear of political repercussions (cf. research difficulties below). The efforts put in the selection of the respondents has resulted in the following samples in Tangier (Table 4.1) and Tinghir (Table 4.2):

While overall there is sufficient variation in the age of the respondents, the sample was not fully balanced in terms of gender and socio-economic position. Learning from the difficulties encountered in reaching out to female participants in Tangier, extra attention was subsequently given to the recruitment of female participants when conducting fieldwork in Tinghir. Also, the socio-economic backgrounds of the respondents in Tangier were slightly higher compared to those in Tinghir (although none of the respondents interviewed were particularly wealthy). While there is certainly a large number of people in a lower socio-economic position living in Tangier, it proved much harder to reach them due to their scattered location in the

**Table 4.1** Respondents interviewed in Tangier

| Pseudonym | Gender | Age | Birthplace | Occupation |
|---|---|---|---|---|
| **Formal (tape-recorded or written) interviews** | | | | |
| Budur | Female | 24 | Antwerp | Housewife |
| Amine | Male | 28 | Al Hoceima | Shopkeeper |
| Achraf and Claude | Male | 30 and 36 | Errachidia and Nigeria | Artist and unemployed |
| Ali | Male | 65 | Tangier | Civil servant |
| Khalida | Female | 40 | Tangier | Artist |
| Nizar | Male | 24 | Marrakech | Student economics |
| Mehdi | Male | 23 | Tétouan | Unemployed |
| Faiza | Female | 28 | Unknown | Human resources |
| Sarah and Hasna | Female | 38 and 33 | Tangier | Beauty salon owners |
| Sami | Male | 21 | Unknown | Salesman |
| Walid | Male | 31 | Small village | Teacher and hotel employee |
| Imane | Female | 35 | Oujda | Cleaning lady |
| Zakaria | Male | 67 | Al Hoceima | Tourist guide |
| **Informal interviews (non-recorded)** | | | | |
| Buchra | Female | 35 and 23 | Sousa | Teacher |
| Douae | Female | 24 | Not in Tangier | Housewife |
| Youness | Male | 38 | Tangier | Salesman |
| **Expert interviews** | | | | |
| Nabil | Male | 40 | Unknown | Head of NGO working on migrants in Morocco |
| Omar, Hachim, Bilal | Males | 70 | Tangier | Retired meteorologists |

city and surrounding areas. The best entry was to observe some courses as a 'researcher as a participant' in a vocational training programme for women and conduct some ethnographic fieldwork, establish informal contacts, and invite people for interviews.

Questionnaires were developed within the broader framework of the MIGRAD APT project. The interview topic lists gauged first to understand the perceived environmental changes in the immediate living environment and, by extension, in Morocco. In order of appearance on the topic list, the following topics were discussed: socio-demographics, living in Tinghir/Tangier, the natural environment and (perceived) changes herein, familial and collective solidarity, and remittances. The interview guide used with respondents in Belgium followed a different yet similar outline, as its focus moved from describing the respondent's situation in their area of origin (prior to departure) and the nature of their migration journey to Belgium to analysing their current situation in Belgium and that of their community of origin, with perceptions of environmental change and transnational practices between Belgium and Morocco serving as a red thread throughout the discussions.

**Table 4.2** Respondents interviewed in Tinghir

| Pseudonym | Gender | Age | Birthplace | Occupation |
|---|---|---|---|---|
| **Formal (tape-recorded or written) interviews** | | | | |
| Loubna | Female | 25 | Ouarzazate | Student |
| Malak | Female | 40 | Village in the natural reserve of Iguernan | (Cattle) farmer |
| Chafik | Male | 64 | Tinghir | Hostel owner |
| Younes | Male | 40 | In the surroundings of Tinghir | Head association |
| Mouhcine (Idrissa), Mamoun (friend), Ghadi (friend) | Male | 33 | Tinghir – 3 km | Cafe owner |
| Rehana | Female | 46 | Tinghir | Housewife |
| Zineb | Female | 32 | Tinghir | Unemployed |
| Salima | Female | 50 | Tinghir | Housewife |
| Latifah | Female | 45 | Tinghir | Teacher |
| Focus group members female association | Female | Diverse | Tinghir | Unemployed |
| Khadija (group of nomads) | Female | Diverse | Tinghir | Nomad |
| Nayla | Female | 45 | Elsewhere | Owner telecommunication shop and association |
| Safa | Female | 24,5 | Tinghir | Student accountancy |
| Chaima | Female | 55 | In the surroundings of Tinghir | Housewife |
| Faisal | Male | 30 | Ait Haddou (quarter Tinghir) | Unemployed truck driver |
| Rachid | Male | 56 | Tinghir | Salesman kiosk and president agricultural association of Afanour |
| Thami | Male | 62 | Tinghir | Labourer in nuclear power plant |
| Jamal | Male | 40 | Tinghir | Journalist |
| Ben | Male | 51 | Tinghir (Afanour) | Alderman community Tinghir and president association (geographer) |
| Houda | Female | 51 | Ouadza (region Essaouira) | Unemployed widow |
| Yanis | Male | 27 | Igoudmane | Guide/farmer |
| Ghafour | Male | 35 | Tamtatouchte | Hotel owner |
| Darid | Male | 50 | Tamtatouchte | Restaurant owner |
| Elyazi | Male | 60 | Tamtatouchte | Housewife |
| **Informal interviews (non-recorded)** | | | | |
| Lakbir | Male | 24 | Tinghir | Student welding |
| Muhammed | Male | 60 | Tinghir | Guardian mosque |

(continued)

**Table 4.2** (continued)

| Pseudonym | Gender | Age | Birthplace | Occupation |
|---|---|---|---|---|
| Nour | Female | 45 | Tinghir | Head association women |
| Hakim | Male | 40 | Tinghir – in the Todgha gorge | Cook in a restaurant, renter of cars and tourist guide |
| Ismael | Male | 30 | Todra gorge | Tourist guide |
| Fadoul | Male | 20 | Caribbean island | Owner tourist mint tea bar Todgha gorge |

Questions about environmental/climate changes sometimes proved problematic in Morocco, as many respondents were not necessarily familiar with climate change discourses, or did not link them to their own living environment. Inspired by Wodon et al. (2014), and in order to address this challenge, more questions were therefore asked about the *weather*, and more particularly about changes in weather events, the consequences of such weather events/changes, and people's adaptive capacity concerning such weather events. Conversely, migration patterns, histories, and trajectories were very easy to inquire about and often even served as topics for 'small talk'. This could be due to the presence of a 'culture of migration' – which refers to the feedback mechanisms of international migration that imply that the sending of information about the immigration country and migration trajectories by migrants results in a particular culture that portrays migration in a particular fashion – and influences the development of migration aspirations in the region of origin (Timmerman et al. 2014) (see Chap. 7). Respondents were further encouraged to reflect upon prevailing political trends, gender inequalities, historical developments (e.g., ethnic wars, water wars, etc.), the welfare system, religion, and the King. This helped to see how they perceived their broader society and particularly how they perceived barriers, opportunities, and conflicts within it. Finally, considerable attention was given to migrants' remittances and support networks, which were often inspired by religious motives.

The data analysis facilitating software Nvivo10 was used to structure, code, and analyse the data. Data coding was first applied in a very open coding way, followed by more axial coding (cf. Corbin and Strauss 1990). These codes were very much in line with the themes questioned in the interviews and served as a first way to organize the data and link codes together. During more in-depth analyses of the themes and the writing of the chapters, these codes were later further analysed using Word and more selected queries in Nvivo. The following main nodes/codes were used as a starting point for the analyses in the book: 'agriculture', 'aspirations', 'climate/environmental change', 'community resources', 'education', 'employment', 'gender', 'socio-demographic characteristics', 'marriage and family life', 'ethnographic fieldwork/methodology', 'migration', 'Morocco', 'religion', 'standard of living', 'social environment and discourses', and 'urban environment'. Based on these more general codes, more specific smaller codes were used and gradually built up along the way. The datasets were analysed separately for Tinghir and Tangier and contrasted against each other throughout data collection and

analyses. Within the MIGRADAPT project, researcher triangulation took place as other project members reflected on these analyses during project meetings, for instance contrasting these findings against empirical research conducted in Senegal and DR Congo.

### *4.4.2 Research Difficulties and Researcher Positionality in the Moroccan Fieldwork*

The fact that the principal researcher was neither a local nor affiliated with the same religion, namely Islam, but a female, tall, higher-educated researcher, with blonde curls and blue eyes, aged 32, always stood out during fieldwork. Being seen as 'the other' allowed me to ask 'culturally inappropriate' questions and to behave in a way that sometimes contradicted prevailing social norms. This naturally caused some awkward moments and resulted in extra help being needed during the fieldwork. Conducting fieldwork and audio-recorded interviews caused additional stress and feelings of mutual misunderstanding. For instance, migrants who had returned from Belgium to Tangier were the only ones who seemed to prefer to conduct an interview within a fixed timeframe. Conversely, the majority of the respondents interpreted interview requests in a very broad way, understanding the interview process as something that could extend over many hours and overlap with other activities such as going for a walk, exchanging several emails, or accompanying respondents to social events or festivities. These long stretches of time devoted to conducting interviews however enabled the main researcher to better grasp respondents' day to day living, lifestyles, and constraints. It is worth noting that, for some respondents, the act of conducting an interview itself seemed to signal previous and current fear of consequences on part of the political regime. Particularly in Tangier, some (mainly male) respondents appeared to be very afraid of the political regime when conducting research (especially in public) due to their perceived limited freedom of speech in Morocco. This led them to refuse that the interview be audio-recorded or suggest that the interview takes place in somewhat remote places – such as the neighbouring beach restaurant or bay, McDonalds, or a secluded bar – or both. This was also due to the fact that most did not want to be seen with a Belgian, female, researcher at their home. Female respondents were in most cases interviewed at home or during local conferences.

Fieldwork and interviews were sometimes rendered slightly complicated due to two gender issues, signalling the need to account for gender considerations in the data analyses as well. A first issue refers to the female researcher who was, in some cases, seen as a marriage candidate, as a subordinate who should not be left alone while walking on the street. 'Hepeating' and 'mansplaining' seemed to be an inevitable feature of the main researcher's exchanges with most male respondents. For instance, male respondents sometimes felt more entitled to tell me what my research, day, or experience was about. Mansplaining was also recurrent as far as the

research topic was concerned. Yet, however inconvenient they may seem, these practices of 'hepeating' and 'mansplaining' could be used as a source of background information on a person's views on the topic of study. As it will become clear in the chapter on perceived environmental changes (Chap. 5), not everyone interpreted and defined environmental changes in a similar way. Many men repeated the discourses on climate change and how it possibly links to migration and displacement, while adding some of their interpretations. This helped to immediately gain insights in the person's views on the topic and assess whether they repeated Western discourses or whether they had additional information or linked it to the local context.

A second gender issue was more related to the data collection process itself. The search for female participants, who were often seen as unsuitable interview candidates by my contact persons, was difficult. Besides, due to higher levels of illiteracy, female respondents more frequently needed a translator. Consequently, sampling strategies changed over the course of the fieldwork as, despite the main researcher's explicit efforts to search for women respondents, male participants would pop up anyway on the street. Another difficulty during the fieldwork was related to the language barrier between the respondents and the interviewer, who is not a native speaker of French, Arabic, or Amazigh. Interviews were conducted mostly in French, but also in Dutch, English, and Spanish. In some cases where a translator was needed to interview older respondents, he or she was sought in the respondent's immediate surroundings (e.g. neighbour, cousin). After transcription and translation of the interview content, the main researcher noticed that translating biases only occurred when the respondent and the translator were from a different sex, and the interpretation of the interviews was done accordingly (which was the case for two interviews, both conducted with the same translator).

This brings us to the final issue of reflection, namely language-related issues. As the main researcher was not proficient in either Arabic or Amazigh, French was instead mainly used to communicate. The fact that the main researcher was also not a native speaker of French meant that plain and straightforward words and expressions were used, thus helping to relate with respondents who had also only learnt French as a second language. In the case of more proficient French speakers, their advanced level seemed to emphasize 'otherness' and gave them an incentive to speak more, to provide additional insights, and to explain everything in detail. Sometimes, the combination of being a non-native French speaker and local dialects complicated communication, albeit never in a sense that communication was made impossible. Together with lack of local language proficiency, additional attention was needed to become familiar with the local customs, cultures, and habits. This already became clear in the way of responding to my requests for interviews and their interpretation. In particular, 'Inshallah' was often given in response to a request to meet and conduct an interview, which was too frequently interpreted by the main researcher as a 'yes'. Only later did the usage of this word by other respondents – although it could certainly refer to a 'yes' – appear more nuanced. As the usage of this word is vague, it also may be used as a polite way to decline interview requests. Similarly, the interpretation of 'time' could differ, but often turned out to have positive sides as well. As many last-minute decisions were made regarding the timing, the researcher

had to 'let go' of her very fixed interpretation of time and schedules and be as flexible as possible. If interviews were planned too far ahead, in many cases, they were likely to be rescheduled, cancelled, or even forgotten about. On the other hand, it proved extremely easy to schedule an interview 'on the spot' or in the near future. The challenge was to keep the agenda as empty as possible, without losing opportunities to meet new people and respondents.

Throughout the duration of the fieldwork, there were many other ways to become familiar with Morocco, beyond getting to learn more about Moroccan cultures and habits. One was to attend a local conference, as illustrated in the following field notes extract. This is a perfect illustration of how the main researcher became familiar with Moroccan culture and habits, such as eating times, sharing food, the importance of the King, the attraction of conferences for associations, and the functioning of associations in Morocco. As a researcher, the two conferences attended during the fieldwork were very insightful as they enabled me to meet other (international and local) researchers from a wide variety of disciplines, as well as local policymakers, heads of associations, and vulnerable groups. The first conference attended by the researcher was held in Ouarzazate before starting the fieldwork in Tinghir, while the second was in Tinghir itself in the middle of the fieldwork. Some of the interviews were conducted and important contacts for the rest of the fieldwork were made during the second conference. When conducting fieldwork, there was a clear need to understand how locals communicate, how they use social media, at what time they eat, and much more. Surprisingly, attending a Moroccan conference increased my researcher reflexivity and questioned personal characteristics and assumptions. Thus, the first conference attended in Ouarzazate was very illustrative of how one is expected to behave and how this sometimes contrasted with the expectations and assumptions of the researcher. This experience increased the researcher's awareness of Moroccan 'rules of conduct', facilitating the fieldwork afterwards. Below is an excerpt from some of the field notes from the first conference in Ouarzazate, which can be used to further illustrate this point:

> This may sound very academic, but you never really get to know a culture ... until you attend a local conference. For my current research project, I did my best to understand Moroccan culture in order to better understand Moroccans' decision-making processes in life. And as it turns out: attending a conference in Ouarzazate helped me to actually feel and experience Moroccan culture at its best. After 'intensively' searching for three weeks to find people in Tangier (Morocco) that were willing to do an interview with me, talking about their migration aspirations and whether this was related to climate change effects in their region of origin, I found out there was a conference organized on climate change in Morocco in the following weeks. My contact – which I found through an announcement in a Facebook group – sent me a message on Whatsapp, to contact through Whatsapp a woman he knew. As already had become clear over the past weeks, Whatsapp was my new way of communication with everyone and even 'recruiting' new respondents for my research. Although I love sending smileys, chatting and crazy animated GIFs, I could have never imagined that this would be the start of my new adventure, namely becoming an international speaker at a Moroccan conference on Territorial Marketing. After some Whatsapp messages, a late-night call and the submission of my abstract, I got accepted.
>
> Eager as I was to meet local academics working on the same topic, I could not be fast enough to search for a nice hotel during an important period that would give a boost to my fieldwork

and get me started. Wrong thought! The day before the conference, my contact person on Whatsapp was so kind to share the directions to the hotel. Say what? Yes, apparently, it was all included and I would better be there. Stubborn and slightly confused, I refused as I already had arranged a cab that would pick me up at the airport (at 1 a.m.) and reserved a hotel room elsewhere. Thanks, but no thanks, problem solved. While waiting in the middle of the night for the cab driver, I saw a van searching for people, then heard my name and they politely suggested to stay at their hotel. Despite many more attempts to refuse their offer and a cab driver that could arrive any minute, it was clearly an offer I couldn't refuse. This was the moment I knew this would be a special kind of conference. These initial thoughts were immediately confirmed when around 2ish, in the middle of the night, the conference team was still present to do the registration of all newly arrived conference members, and to show me my shared room. Nice, nice, I gave up my initial private hotel room, to start my registration in the middle of the night and to share my room. Although nobody arrived at night, I could not really understand this type of hospitality – why would they prefer this? I did not really know what to do with my individualist habits and preferences. I secretly wished I could have refused their offer to join the conference van and give up my personal space. I did not only get lost in the sense that I did not know why the conference organizers would prefer this, I also did not know exactly where I was and what they had planned for me throughout the rest of the conference. The conference was in Arabic, in French, and if you wanted even in English. This lack of sense of direction, combined with – in my opinion unseen – terrible time management, I did not have any clue when I would present, where I would present and when we would eat. They seemed to be freewheeling with the conference agenda, in which at least half of the speakers were not present, and sudden changes were made to the conference program, leaving me really lost in translation.

The feeling of being lost just got stronger every second. Firstly, when I was asked to pose for a picture in front of the conference room for local television (note to self: never wear a fleece at a conference again) or when a lady during lunch, part of the traditional festivities of the conference, sat next to me at my table and started eating my bread, asking me for some money. Men all over the conference thought I – a 32-year old post-doctoral scholar – had accidentally shown up at a conference and started to 'mansplain' my discipline to me and research topics like their lives depended on it. During many conversations, I didn't even have to say anything to keep the conversation going, although we were only with the two of us. This was not limited to the Moroccan academics, certainly not, and applied just to all men present. My name had magically changed into 'la mademoiselle charmante' or 'la gazelle' and they were teaching me sociology, like I had no clue whatsoever what that could possibly mean. Hardly asking my real background and expertise, all these men would be very glad to help this helpless student, and were happy to explain my research topic – to me. Was it just me, or would it have been an alienated experience for everyone? Someone even tried to explain to me the Belgian governance structure. Although I know the Belgian governance structure is quite hard to explain – and I fully appreciate their efforts – this started to become quite awkward.

These lost feelings were even more strengthened during the second day, when the organizers told us to pack our bags and change hotels. As I already did not have any clue anymore where I was and what would happen, I did not refuse anymore and just packed my stuff, ready to change hotel in the morning. Wrong thought again! We would drop our stuff and as we were already quite late, we would immediately go to the conference venue. Again, we had to leave our stuff at a random parking lot, which made it difficult to estimate when I would be back and if I would manage to find my own luggage by myself. Being already more at ease during the second day of the conference and trying to not pay attention to the time schedule of the conference program, I was happy to find out that there was a lunch around 3.30 p.m. (instead of 1 p.m.), until 5 p.m., where we shared our food – as is common

in Moroccan culture. Everyone at my table ate with their hands from one big plate and they had a lot of fun with my clumsiness in doing so. The end of the conference came nearer and hours were spent thanking each other – just like the first day of the conference – in Arabic, taking pictures, dancing with the local singing and dance group, and last but certainly not least: the reading of the letter to the King. Thinking of my own king and his family, I asked in which way he would be updated about the content of this letter. 'He would find out' they said.

Surprised, satisfied and still slightly lost, I already longed to go to my hotel room. Feeling quite exhausted and disgusted by all forms of mansplaining, I wished I did not have to talk to people anymore, especially men, or being polite. Honestly, this is often a true wish after all types of conferences – which are always quite exhausting – this time I really meant it and needed it, already partly due to the long working days. I was not able to be nice to any more men that forced me to listen to their ideas about Belgium and the so-called lazy Moroccan immigrants that lived there, being ignored when trying to tell them that I actually was no longer a student and I had passed that period already quite some years now and trying to have an equal conversation without being treated as a silly young kiddo. Still happy with the insights and contacts I derived at the conference, I stepped on the bus to the hotel. Interesting experience. I met a young PhD student that did his research in Belgium in the bus and we talked a bit about Brussels, while the bus slowly but surely drove us into the desert. I have to admit, this is the moment where I felt hijacked as I really longed for some quiet time and wanted my freedom back. Gala dinner party here we come! I immediately thought I would search a cab and return after we had arrived, I really could not take it anymore. However, as there are no cabs waiting somewhere at night in the desert, I could not do anything else but look at the amazing starry night and surrender. My initial female contact that organized my presence at the conference, must have seen 'desperate' written in my eyes, as she left her entire extended family (!) and joined me at my table. Soup was served around 11.30 p.m., nobody was getting worried or freaked out. People were telling each other 'wow, *je suis fatigué*', but waited carefully for the local traditional dances, the poem read out loud by an important local policymaker of the cultural sector, for dinner – all four menus – to be served and to – again – check in at our hotel around 2 a.m. This last dinner showed me how I should have left my initial assumptions behind and delved into another way of living, how time is just a social construct, how sharing is caring and how much mansplaining is still alive and kicking.

While many feelings of being lost could have been easily avoided I guess, this conference gave me a quick insight into the Moroccan culture that focuses on sharing, accepting social obligations and flexible organization style. As ethnocentric it may seem, one cannot easily forget about their cultural background, despite being eager to learn and even attempt to study 'the other'. The ethnocentricity of my experience did not necessarily lie in the acceptance of the differences, but really referred to my internal and very strong resistance towards having less control over my personal schedule during these three conference days. While I certainly do not suggest that I did not have any freedom during this Moroccan conference, I rather refer to the lack of predictability of the recurring events, habits, and frequently made mistakes, which are very common for 'outsiders'. I kind of freaked out when people were really chill, even when a conference slot surpassed its time, not by one minute or even five but by an entire hour or so. Exactly this lack of being able to estimate when I would be home after attending this gala desert party with dancing nomads in tents in the desert, eating our dessert in the middle of the night, caused considerable acculturation stress and made me wish I could be a minute by myself. Familiarity with cultural practices, time schedules and expectations, would make me more relaxed and even enjoy the recurring sharing practices that characterize Moroccan culture and traditions, and understand that sharing is really caring!

This extract from the researcher diary during the fieldwork demonstrates that researcher reflexivity can never be underestimated during fieldwork and is a very powerful exercise that needs to be conducted at all stages of the research: questioning oneself about one's feelings about particular cultural habits and practices, and critically reflecting about what they say about yourself as a researcher and the society/research setting you find yourself in (cf. Finlay 2002).

To conclude, taking up an outsider perspective to conduct fieldwork on environmental changes and how they relate to migration aspirations and patterns in Morocco was overall very challenging but insightful. These experiences during the fieldwork that were related to researcher positionality need to be taken seriously during data analysis as they could signal recurring processes of the local Moroccan cultures of the regions studied that are also challenges, breaking points, or division lines in everyday Moroccan life.

## 4.5 Research Methods in Belgium

The interviews conducted in Belgium were conducted by several researchers from the MIGRADAPT team between December 2017 and July 2019.[3] The research team conducted 17 in-depth semi-structured qualitative interviews with Moroccans living in the Brussels-Capital Region (City of Brussels, Molenbeek-Saint-Jean, Auderghem, Schaerbeek) as well as in Liège, in Belgium's Wallonia region.

### *4.5.1 Data Collection and Material*

Half of the respondents (n = 9) from our sample came from Tangier (either from the city itself or from rural towns located on its outskirts such as Gzenaya and Beni Ouriaghli). The rest came from Larache (a harbour town located 80 km south of Tangier), Tetouan (another harbour town nearby the Spanish enclave of Ceuta and the Strait of Gibraltar), Kaa Asrass (a coastal town 50 km south of Tetouan), Berkane (in north-eastern Morocco), Sidi Slimane (a small city in the north-western centre of Morocco located between Kenitra and Meknes), and Tinghir (an oasis in the Todgha valley). The majority of respondents were men (n = 12). Almost half of the sample (n = 7) had been in Belgium for a period exceeding 45 years, while the other half was split between those who had arrived less than 10 years ago (n = 5) and those who had arrived 10–30 years prior (n = 4). The average age of our respondents was 48.5 years, with a balanced distribution between different age categories (Table 4.3).

[3]The authors wish to thank the respondents for taking part in this research, as well as Maeva Belloiseau and David Mompoint Jeune for their crucial role in the data collection process.

**Table 4.3** Respondents interviewed in Belgium

| Pseudonyms | Gender | Age | City of birth | Occupation |
|---|---|---|---|---|
| **Formal interviews (tape-recorded or written)** | | | | |
| Farida | Female | 46 | Tangier | Teacher (on career break) |
| Hossam | Male | 64 | Tangier | Transport Agent |
| Chafiq | Male | 63 | Tangier (Gzenaya) | Transport Agent |
| Latif | Male | 52 | Tangier | Cleaner (owned a butchery in Morocco) |
| Farid | Male | 60 | Tangier (Beni Ouriaghli) | Transport agent |
| Nassim | Male | 58 | Tangier | Factory worker |
| Samir | Male | 53 | Tangier | Social worker |
| Farouk | Male | 57 | Tangier | Stopped working due to health issues (former bus driver) |
| Omar | Male | 70 | Larache | Retired (ex-factory worker in Belgium, formerly a fisherman in Morocco) |
| Saida | Female | 30 | Sidi Slimane | PhD student and freelance journalist |
| Amina | Female | 27 | Tetouan | Master student |
| Cherifa | Female | 26 | Tetouan | Master student |
| Hamid | Male | 42 | Tinghir | Unemployed |
| Marouane | Male | 49 | Larache | Instructor at the social welfare services (formerly a teacher in Morocco) |
| Nabil | Male | 50 | Berkane | House painter (same job as in Morocco) |
| **Informal interviews (not recorded)** | | | | |
| Rachida | Female | 39 | Tangier | Secretary |
| Kamel | Male | 40 | Kaa Asrass | NGO worker |

### *4.5.2 Research Difficulties and Researcher Positionality in Belgium*

Fieldwork proved more challenging than anticipated due to a number of methodological and practical issues which hindered our access to a larger and more balanced sample of respondents – in terms of age, gender, socio-economic background, area of origin in Morocco, and length of stay in Belgium. For instance, migrants who had been in Belgium for longer periods of time (and who were, in many cases, bi-nationals) were more likely to accept an interview than newcomers (defined as migrants who had arrived in Belgium no more than 5 years prior to the interview). Although this is consistent with the long tradition of Moroccan immigration to Belgium and the subsequent large numbers of first-generation migrants who have become Belgian citizens since their arrival (see Chap. 3), this contributed to the distortion of the age balance within our sample.

The research team overcame these challenges by adapting to the research context and notably through expanding the initial sampling criteria to include respondents who had been in Belgium for a period exceeding 10 years, as well as respondents

who came from outside of Tangier and Tinghir (the two initial areas of origin considered by the MIGRADAPT project). The team therefore widened the scope of its investigation to include various experiences of migration between Morocco to Belgium rather than focusing solely and specifically on 'recent' migration trends. Furthermore, although the majority of respondents (and people approached to participate in the interviews) were from Tangier, it appeared far more difficult to identify individuals from Tinghir (in fact, only one respondent from Tinghir could be identified). Many people we approached had never even heard of Tinghir. This can be linked to the fact that, historically speaking, most migrants from Tinghir initially moved to France, followed by Belgium and the Netherlands. These cultures of migration explain why people from Tinghir form a minority within the Moroccan community in Belgium (which is overwhelmingly composed of people coming from the Rif) and the added difficulty of identifying respondents or even intermediaries who could point us to the *Tinghirien* community. As a result, the research team had to deviate from its original intention to concentrate on both Tangier and Tinghir and instead decided to focus on Tangier, incorporating respondents from the greater Rif region (Tetouan, Kaa Asrass, Larache, Berkane) in the sample. Indeed, the geographical and socio-cultural proximity across these locations suggested adequate potential for comparison. Eventually, the sample also included respondents from more distant cities, such as Sidi Slimane and Tinghir, as the respondents in question had internal migration experience (including in Tangier) and proved to have very relevant experience and insights about environmental changes facing Morocco as a whole.

The second difficulty lay in overcoming the apprehensions of many prospective respondents – especially newcomers – regarding our research, which focused on two politicized and thus sensitive topics, namely migration and climate change. Some suspected us of being ill-intentioned undercover civil servants or police officers, thus explaining the difficulties in finding respondents who had arrived recently (less than 5 years ago) in Belgium unless they were here regularly (such as international students). While looking for respondents in a well-known market in Brussels, two Belgian-Moroccans we had initially approached to discuss our research warned us that it would be difficult for us to find people to interview, telling us: 'a lot of people working here are illegal migrants … If they see you with your notepads and your glasses, they will become suspicious'. This was confirmed in several instances, where we were greeted with questions such as: 'Are you from the police?' Showing our University ID proved to be a good strategy to dispel their doubts but did not always lead to an agreement to interview. Introducing ourselves as 'students' – which we were – rather than 'researchers' also seemed to cause less distrust. In some cases, we had to adapt the ways in which we introduced the research, avoiding terms such as 'interrogate' (*interroger in French*) and 'migration journey' (*parcours migratoire* in French). Instead, we stressed the environmental focus of the research topic (as the topic of climate/environmental change seemed to be perceived as more neutral and less sensitive than that of migration) as well as its expected outcomes, namely formulating policy recommendations to help improve both migration and climate change/development policies in both Belgium and Morocco, through

knowledge co-creation. Interestingly, when explaining that we were specifically interested in studying the interlinkages between migration and environmental change in the context of Moroccan immigration to Belgium, its (perceived) lack of relevance as a migration driver was sometimes used as an excuse to decline our invitation to interview, the person arguing that they would not be able to provide us with adequate insights. Although we would explain that we were also interested in their perceptions of such disruptions, no matter whether they had experienced them first-hand or not, it was often difficult, if not impossible, to move past this first refusal. This unease can also be exemplified by the fact that a few respondents did not want to speak on the record. In some other cases, especially when entering shops, people politely refused to meet at a later time, claiming that they were busy and would not have time to meet after work either.

Similar to the difficulties encountered in the Moroccan fieldwork, the main researcher was also a young, white, female, which increased feelings of 'otherness', especially when trying to identify potential participants in male-dominated public places. In order to tackle this, prospecting was done in pairs and, eventually, by a male researcher who was able to enter cafes, shops, and organisations that were mainly attended by men without overly standing out as an outsider. This strategy proved more successful to identify (male) participants. It is worth noting that the only female respondents from our sample were either highly educated, or students. Female workers in shops would often cut the conversation short and at times would ask that we speak with their husband instead.

The most successful way to secure interviews consisted of identifying 'gate-keepers' which sometimes led to follow-up interviews and eventually improved access to respondents. This was done by means of contacting the representatives of local non-profit organisations (ASBL) – usually focused on youth, sports, and culture – that served as community gatekeepers and were more inclined to discuss issues with a high social relevance such as migration aspirations, integration, social cohesion, and environmental changes. This allowed the team to move beyond their portrayal as 'outsiders' and to gain access through the support of an 'insider'. Indeed, something that quickly became clear was the inherent bias in presuming someone's nationality, especially as an outsider. As mentioned earlier, this bias could however be reduced as much as possible through targeting shops and associations that clearly displayed their attachment to Morocco or through snowball sampling and individual referrals, especially in neighbourhoods that are known to host large immigrant populations.

## 4.6 Conclusions

The main aim of this chapter is to set out the methodological context of the research conducted in Morocco and Belgium and to provide more details on the research participants, data collection procedures, and the researchers' positionality as well as on the difficulties encountered during the data collection phase. One main finding

already arises from this chapter. Although there are considerable migration exchanges and networks between Belgium and Morocco, the environment-migration nexus is not necessarily a linear relationship and migrants – including those potentially migrating because of environmental reasons – may follow a more fragmented journey on their way to Belgium. Hence, this also made us reflect upon the rationale of the MIGRADAPT project which supports the hypothesis that migrant networks and both social and financial remittances sent back to the place of origin could contribute to adaptation to environmental changes and relate to environmental migration. By selecting a Moroccan region that is heavily affected by environmental change (Tinghir) and one that hosts high numbers of internal migrants (Tangier), we encountered difficulties matching respondents in Tinghir to migrants living in Belgium. While migrant networks between Tinghir and Belgium clearly exist, they are relatively less-developed than the ones tying other Moroccan regions (e.g. Rif area) to Belgium. Nevertheless, interviews with Moroccans in Morocco and with Moroccan migrants living in Belgium offered a more nuanced view on how environmental changes interact with other social, political, economic, and demographic circumstances across time and space.

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# Chapter 5
# Perceptions and Explanations of Environmental Change in Morocco


As demonstrated in the previous chapters, land in Morocco is mainly used for farming and pastoral activities. These activities are more vulnerable to the consequences of increased precipitation and drought due to climate change. Various modern and traditional adaptation strategies – among which migration to urban centres or abroad – have been used to deal with environmental changes. This suggests that a large share of inhabitants are in some way aware of the changes in their natural environment and already familiar with adaptation strategies (Schilling et al. 2012; Mertz et al. 2009). However, in most studies, researchers focusing on this topic do not relate this to people's overall views on environmental change and the adaptation strategies employed by the actors involved. When they do, they hardly focus on people living in the MENA region (Nielsen and D'haen 2014); West-Africa (Mertz et al. 2010, 2012; Afifi 2011; De Longueville et al. 2020); DR Congo (Bele et al. 2014; Few et al. 2017); and India (Howe et al. 2014). The only exception is the study on Morocco by Nguyen and Wodon (2014); Wodon et al. 2014). Hence, it is unclear how these environmental changes are actually perceived and how they influence the ways people view and respond to them, and (actively) develop adaptation strategies to deal with such changes (cf. Chap. 6). This is especially important since perceptions of environmental changes and the risks associated with them vary across and within cultures (Vedwan 2006; Mertz et al. 2009, 2010; Leclerc et al. 2013). Furthermore, there is a perception bias with regard to the perceived environmental changes, as some types of changes, such as rainfall patterns, are more easily noted and compared to others, such as temperature changes (Howe et al. 2014; Few et al. 2017; De Longueville et al. 2020; Bele et al. 2014). Additionally, people mainly remark on changes when these apply to their livelihood activities (Bele et al. 2014; Howe et al. 2014; Wodon et al. 2014; De Longueville et al. 2020). In current research and policymaking, ongoing debates on environmental migration and displacement too frequently assume that everyone perceives environmental change in a similar fashion. This becomes problematic in debates on environmental migration or climate refugees when environmental changes are assumed to automatically result in some kind of (forced) migration, leaving little space for the views and agency of the



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people involved (Stern 2000; McLeman and Gemenne 2018; Khare and Khare 2006; Rigby 2016).

This chapter examines perceptions of environmental changes in Morocco in the context of the wider socio-economic, religious, economic and cultural environment (see also Smith et al. 2012). This approach is innovative as so far, little is known about (1) Moroccans' perceptions of environmental changes; and, (2) the impact of environmental/climate change discourses on people's views on environmental change. Before setting out my empirical findings, I first discuss in the following sections different approaches towards human-nature relationships in general and, subsequently, contextualise how environmental change and human-nature relationships in Morocco could be interpreted within the wider cultural, historical, economic, and religious context. Finally, it must be remembered that this book uses the concept of 'environmental change' instead of climate change as it is broader and encompasses more changes. Moving away from the use of the 'climate change' concept is particularly useful for this chapter, which seeks to open up to people's ideas concerning all kinds of environmental changes without necessarily requiring knowledge of prevailing 'climate change discourses'. However, when the participants or I explicitly refer to 'climate change discourses', this term will still be used.

## 5.1 Perceived Environmental Changes

When examining the perceptions of environmental changes, two main aspects need to be discussed: (1) the views on human-nature relationships and (2) the learning method of such environmental changes. First, *people's overall views on human-nature relationships* could determine how people perceive environmental change. Previously, environmentalists approached environmental issues and human-nature issues predominantly from an *anthropocentric* approach, focusing on the needs of humans and seeing nature only in light of these human needs. Consequently, any alternative approach aimed at appraising the relationship between humans and nature are neglected. Such 'alternative' approaches are crucial in order to understand environmental problems and human behaviour towards them. These approaches are either *ecocentric*, putting the needs of nature at the centre and seeing human activity in terms of these needs, or *theocentric*, departing from the fact that faith defined both humankind and nature in relation to God (Hoffman and Sandelands 2005; Rigby 2016).

Second, *the learning method of environmental changes* can shape people's perceptions of environmental change as well. There are two different ways in which people can learn about climate changes and the risks associated with them: from personal experience or statistical description (Weber 2010; Spence et al. 2011). Distinguishing people in this study based on their use of methods to learn about environmental change is conceptually valuable as the documentation of skills and tacit awareness could further the knowledge in official discourses and statistics on environmental change and environmental migration (cf. Bremer et al. 2017).

Depending on one's profession, educational background, media channel, or personal interests, learning methods used to inform about environmental change may differ. This impacts perceptions on environmental change as well as the ways in which environmental changes are perceived to impact people's living environment and standard of living (Gemenne 2010; Kelly and Adger 2000; Hillman et al. 2015). Thus, as demonstrated in this chapter, studying perceptions on environmental change in a systematic and open way is crucial since people's views on such changes, on their perceived role in causing these environmental changes, and on how to deal with such changes, further impact the perceived environmental risks and adaptation strategies, which are discussed in Chap. 6.

## 5.2 The Moroccan Context

Understanding prevailing views on environmental change in a given culture/region/country is not always as straightforward as it seems. This is certainly the case for Morocco. In this context, one should recognize the religious, cultural, and geographic diversity and tensions within the Moroccan context as well as the economic activities through which such ideas are passed along generations. Let me now offer a brief introduction on how the historic and cultural background can impact the perceived human-nature relationships of people living in Tangier and Tinghir. The history of the nation-state of Morocco is characterized by specific tensions between regional and local Berber/Amazigh identities, as well as Arab and Islamic identities of the Moroccan nation-state (Karrouche 2017). This history is reflected in the religious hybridity within and across regions in Morocco and the coexistence of distinct religious traditions, such as Islam, and more traditional/spiritual religious views and practices that are present in Berber/Amazigh culture. Because of this, there are a multitude of interpretations, ongoing debates, implementation and practices related to the natural environment in Morocco that need to be studied in more detail. Additionally, as in all religious denominations, within Islam, a broad range of views on human-nature relationships exists (Ammar 2013; Izzy Deen 2003). Given the religious and cultural hybridity between Arabs and Imazighen (Berbers), Islamic and other spiritual or religious belief systems, perspectives on human and nature vary considerably within Morocco and across regions. Although the categorization of people as 'Berber/Imazighen' is mainly linguistic, it comprises particular cultural, structural, and institutional elements of the material culture through a particular economic and socio-political organization and customary law. Furthermore, the presence of the Amazigh culture is felt through the ways people look at and interpret the Islamic religion. Again, these cultural practices are often related to land use and agricultural/economic activities. Within these traditions, some religious orders central to Islam have been dismissed as not of very high importance. Instead, more attention has been given to the saint's shrine than is mentioned in the Quran and the existence of Berber-speaking *shurfa'* (the descendants of the Prophet). This suggests that the 'Amazigh-ness' of Morocco is very important to consider in research

because it constitutes Moroccan culture and way of life and shapes the views on the human-nature relationship. However, because of their hybridity with Islamic and other religious perspectives, such as traditional African religions and Judaism, the views of the Imazighen on the human-nature relationship are hard to conceptualize. Rather, broadly speaking, Imazighen worship natural elements such as water, trees, and rocks, and are largely animistic (Hart 1999). This recognition that all things have spirits and that the perception of the environment as a 'community of beings' affects people's beliefs about the natural environment and how to behave in this world. Such worldviews are strongly context-dependent (Snodgrass and Tiedje 2008).

Arab and European colonization, and subsequent decolonization, have not only shaped and (re-)created ethnic identity processes in Morocco, but are often related to religious beliefs and secularization. While the Arabs brought Islam to this region, it is argued that Imazighen are seen as only superficially, albeit still, Islamicised (Karrouche 2017). Without going too deeply into the relationship and history between both, it is important to sketch some of Islam's main ideas in order to comprehend the context in which some views on human-nature relationships in Morocco should be situated. Most forms of Islamic ethics derive from legal precepts that are perceived to be formulated by God. For daily life this means that rules and practices are also weighed against the Islamic 'laws'. As these laws are formulated within a religious context, the use of the word 'law' implies more rigid structures. Taking a closer look at the Arabic word for law, namely, *sharia*, is interesting as this word means 'source of life' – which is translated literally as the 'source of water'. Approaching Islam from an environmental change perspective, this literal translation suggests the importance of water and shows that water problems are not a recent phenomenon in this region (cf. De Haas and El Ghanjou 2000). Furthermore, the premise that all living things were created by God, each having a different function, guides Islam. The functions of all things are balanced by God. Serving humanity is one of these functions, but certainly not the only one. Nonetheless, human beings are seen as the sole protectors of the natural environment. Thus, as everything happens according to the natural law of God, humans should accept events or changes in their natural environment as it is the will of God to preserve the balance within the universe as created by God (Izzy Deen 2003). Consequently, when approaching the human-nature relationship from a more religious perspective, it seems that there are prevalent beliefs about the harmonic character of nature and the recognition that nature – and in particular *water* – is the main source of life.

To sum up, the views on environmental change and the relationship of humans with regard to their natural environment are shaped by local beliefs, traditions, religious ideas, and economic activities. Based on Moroccan history, considerable variation with regards to such views can be expected. This matters for the perceived linkage between environmental change and migration, as well as all other kinds of adaptation strategies that can be developed to deal with these perceived environmental changes and their consequences (see Chap. 6).

## 5.3 Results

To understand how people categorise and frame environmental migration, both the data collected in Tangier and Tinghir are used in this chapter (cf. Chap. 4). During the analyses, both within and across the Tinghir and Tangier regions, significant differences become visible in the extent to which people approach and theorise environmental changes. Hence, the analyses are organised in two sections. The first focuses on perceived environmental changes of inhabitants living in Tangier and Tinghir. Within this section, I first set out the differences in people's perceptions of environmental changes in their immediate natural living environment between Tinghir and Tangier before discussing the differences in views within these regions. These intra-regional differences are related to people's educational level, professional experiences, and access to local or transnational migrant networks. In a second section, the ways in which people living in these regions explained theorised/observed environmental changes are analysed and set out in more depth.

Although the focus on perceptions on environmental change certainly makes sense at the time of writing this book, the dominance of Western views on climate/environmental change were also reflected in the questions I asked during the first encounters and interviews with Moroccan people and when discussing my fieldwork in the market, hostel and everywhere I went. These rather dominant Western ideas concerning climate/environmental change were undeniably present and reflected into how respondents would answer my questions concerning environmental change, indicating some kind of ethnocentrism (cf. Chap. 4). That, along with some minor language misunderstandings, made me quickly realise that I needed to reflect better on the ways in which I would ask about climate/environmental change, giving rise to this chapter. The answers I received when asking about climate change surprised me. People referred to liking the warm climate in Morocco, which was totally different from the cold and rainy climate in Europe. Others immediately said that 'those climate change issues' were something coming from Europe, or referred to polar bears and the melting of the ice caps. And finally, after receiving an entire lecture by one of the respondents on how people in Morocco should live more in harmony with nature, I decided to rethink the way in which I would ask about perceived climate change and how people learned about it, and that I would focus more on how the natural environment had changed over the past 50 years and over generations. By making my questions more concrete and applying it to people's local surroundings, their own youth, or referring to their grandparents' lifetime, more relevant information and useful data was gathered that opened a whole new world. The informal talks that took place when explaining my relatively long stay in Morocco, compared to tourists, formed the starting point for the ideas and analyses presented in this chapter.

### *5.3.1 Perceived Environmental Changes in Tangier and Tinghir*

#### 5.3.1.1 Interregional differences.

When discussing perceived environmental changes in people's living environment, a first important analytical factor is the region (in this case: the city and surroundings) in which people live. Accounts of respondents living in Tangier and Tinghir differ in general with respect to respondents' daily economic activities and the connection they have with their natural environment. In most cases this is also linked to the region in which they live. People in Tinghir seemed more aware of, and concerned with, changes in the natural environment, compared to those in Tangier.

What first follows is an overview of the accounts of people living in Tangier. For example, Budur (female, 24 years old, secondary education degree, Tangier), a return migrant who grew up in Belgium but married to a Tangerine man and whose family originally came from Oujda, stated that 'people move for work, for example, people from Oujda, move to Casa [Casablanca] because there are more schools they could attend or for work'. When asked whether there are water shortage issues in Morocco, she first answered:

> *Budur*: A shortage of water? No, that is not really a problem. You often see that in African countries eh, but I don't think it's that big of a problem here in Morocco, not really, maybe in some other places but not really in Tangier. We have water everywhere! They make taps everywhere, so everyone can drink. You also have a tap here, a cup, and everyone who is thirsty can drink from it. Maybe some people in poorer areas, yes, but I don't think it's a huge problem here.

After her mother reminded her that Budur's mother-in-law always complained about water shortages and droughts in Morocco, Budur smiled and replied that she did not mention that, as it was something from ancient times and did not really matter. Similar to Budur's account, many people in Tangier who did not have that much affinity with other regions of Morocco, did not refer to environmental – or more specifically climate – changes in Morocco at all. When talking about environmental changes, references were made to the sunny weather in Morocco, which was perceived to be more pleasant than in Europe, to the lack of stress in people's lives, and to ongoing desertification near desert areas. People referred rather briefly to the overall climate and natural environment, making comparisons of hospitality, 'warm people', and a nice climate to live in, as illustrated by the account of Nizar (female, 24 years old, student, Tangier):

> *Nizar*: We moved to Tangier. My family doesn't like Tangier, they prefer Agadir.
>
> *Interviewer*: Ah really? Why?
>
> *Nizar*: For the winter, here in Tangier, the climate, there is a lot of humidity, a lot of humidity in Tangier, it's not like in Agadir, you can already swim there right now, in January, in February, in March, there is no problem. (. . .) So the climate in Tangier is not like the one in Agadir. That's really the best climate in Morocco.

*Interviewer*: Why?

*Nizar*: There is a beach, the cold and the heat were always stable, you can swim in January, in March. Here, you can't swim because it's too cold. In Marrakech, you don't have the beach, nor the sea. In Ouarzazate, there is no sea, there are only mountains, it's not a big city where you go to study or work, no, it's a small city.

*Interviewer*: And the climate in Ouarzazate is. . .?

*Nizar*: It's hot, because it's very close to the Sahara.

*Interviewer*: Is that the same in Tinghir?

Nizar: Yes, it's the same, because they are the southern area of Morocco, that's why it is hot, but in winter, it's very cold there. For example in Marrakech, in summer, it is hot. But in winter, it is very cold. *Pourquoi* [why]? Because in Marrakech, it's the centre of the mountains, when it's summer, there is no wind, it is hot, very hot. But during winter, there is snow on the mountains, and it's cold in winter. And that's why it's very cold or very hot. But I said that Agadir is the best climate here in Morocco. When we talk about people, the inhabitants, I prefer the inhabitants of Ouarzazate, it's because in Tangier, it's not Ouarzazate. Because the people of Ouarzazate are very very very nice, it's extra nice. For example, you know a person in Ouarzazate, and you want to sleep and you have no money, you have nothing, you can spend the night with a foreign family, and will say 'Oh no! welcome, welcome', you sleep here, you spend the night and tomorrow you go out, and that's why people from Ouarzazate are very good people. They are the best.

While I made many attempts afterwards to discuss changes in the natural environment, Nizar mainly seemed to respond in terms of liveability and locals' friendliness. This was a recurring phenomenon during the fieldwork and highlighted how my views on climate change and that of the respondents differed, as well as the difficulties inquiring about these views.

The majority of the accounts of people living in Tangier differed from those living in Tinghir. For instance, Budur's account contrasts with that of Chafik, a 64-year old male hotel owner and mountain trek guide living in Tinghir who immediately referred to the droughts and the changes over the years during the first minutes of the interview:

*Chafik*: The drought, yes, the drought, that comes from nature. I am not sure if you know this but every 15 years, the *palmeraie* [palm grove] changes.

*Interviewer*: In which ways?

*Chafik*: Due to drought. Before March, April, there was snow from the mountain ridge, but this year there was nothing. Normally, the drought should start, every five years, the palm grove in Tinghir changes and then the drought arrives.

*Interviewer*: Ok, so it changes a lot

*Chafik*: Yes, because of the water, there is no water! It's not like before, like 40 years ago, like 30 years ago, like, 20 years ago. Even after 10 years it has changed. This year, we didn't have any snow, well, there was snow but not like the years before, in the mountain ridge. We had snow in March, April, May, but only a little bit in June and July. But now, in March, there was nothing, in the old days, I could see snow in January, February, March, April, May, June. . . always snow on the mountain ridge, but the last three years there was no snow anymore, *alors*, the water has lowered.

Contrarily to Nizar (Tangier), who just thought of the 'climate' in terms of personal living preferences, and to Budur who perceived water shortage as something from the past, Chafik immediately started summing up all changes over the years in terms of snow on the mountain ridge and the changes in the palm grove. This seemed to matter more for Chafik since, as he later mentioned, this affects the people living in Tinghir, the organization of the economy, and standards of living.

The broader regional differences in terms of importance of the natural environment for people's everyday lives are of course very understandable since they also refer to urban-rural differences in the importance of nature for survival. This regional divide will be made even more visible through the accounts shared in the next sections.

#### 5.3.1.2 Intraregional Differences

Within each region, I also observed differences in perceived environmental changes. Some determining factors to distinguish people's accounts include their educational level, professional experiences, and access to migrant networks – factors that are frequently correlated within the Moroccan context. In line with migration systems theory (cf. Chap. 2), *migrant networks* create a flow of goods, ideas, and money. With regards to this chapter, special attention is given to the flow of ideas between people and networks – what we can also refer to as 'social remittances'. Moreover, based on insights from new economics of labour migration and migrants, a distinction needs to be made between migrant networks in Morocco and migrant networks in Europe. First, educational level and migrant networks in Europe are decisive factors that determine whether people have knowledge of these specific scientific climate change discourses, connecting CO2 emissions and pollution to global warming. Professional experience – which often relates to educational experience – and migrant networks in Morocco are crucial factors in the extent to which people perceive the environmental changes in their local natural environment.

*Regarding knowledge on climate change discourses*, differences in discourses are mainly noted between higher- and lower-educated people as well as between those with migrant networks in Europe and those without, clearly emphasizing the social inequalities within local communities. These differences relate to the learning method of environmental change. Relatively higher-educated respondents and those with migrant networks often repeated what they had heard about prevailing 'climate change discourses' in media and education, without applying this to Morocco or their own living environment (cf. interview excerpt of Budur). These differences in learning methods are especially visible in Tangier since people living in this city are not confronted with their natural environment in their daily; they are, however, also noticeable in Tinghir. Most respondents belonging to this group were familiar with the idea of 'climate change' in theory. This abstract theoretical framework on 'climate change' is situated in the future and other places. Respondents connected these discourses to a lesser extent to the changing weather patterns,

the gradual degrading of areas, and impacts on agricultural activities within their immediate living environments (cf. Schilling et al. 2012). This is shown, for instance, by the interview excerpt of Rachid (male, 56 years old, kiosk seller and agricultural president of a local non-governmental organisation aimed at the improvement of agriculture in the local community, Tinghir):

> *Rachid*: Climate change, it exists, it exists a lot, in the Seventies, I did my *collège* [high school] in Boumalne du Dades. The *collège* [in Tinghir] did not exist yet, so every morning, when I came from here, we had a lot of snow until Boumalne, but now there is more. There is a lot of [water] in the Oued [river] which was bursting, but now it is rare. We see the riverbed because we miss the rain. The sun now, it stings on the head, I do not know if the inclination of the earth, I just ... it means, the atmosphere changes, the inclination of the earth in 30 years, around its axis, maybe, I believe that the inclination of the earth, after its continuation, it's going to give an favourable climate, better than it is now.
>
> *Interviewer*: So, it will change and improve?
>
> *Rachid*: Here! It means, that there are factories now in Europe, we are not influenced, because we are far, maybe for big cities, like in Europe, as in Asia, Africa, and Mexico-city, in places where there are a lot of factories, or there's petrol that's emitting CO2, but at home now, we're a little affected, not so much.
>
> *Interviewer*: And the drought, how do people manage that?
>
> *Rachid*: The drought, from time to time, it goes up all the time, there are moments, or there is drought but after that comes the good climate.

As contradictory as it may seem, Rachid seemed to be aware of the climate changes due to CO2 emissions across the globe as well as of drought in his living environment. However, as shown by his interview excerpt, he did not connect them to each other. In Rachid's view changes in the living environment were seen as cyclical, and therefore little could be done to alter this. Being the president of agriculture of a local NGO, this interview demonstrates the difficulty of spreading ideas, even within one's social circles, concerning climate change and the long-term devastating effects of environmental change. Moreover, it shows how environmental changes are not necessarily seen as risks for which action needs to be undertaken or adaptation strategies need to be developed.

These results are in line with previous research on this topic that states that accounts on environmental change are often treated in a non-politicised way, adopting widespread scientific climate change discourses from Western countries (Pepermans and Maeseele 2018). This is certainly also the case in this study, as only few respondents applied scientific discourses on climate changes to local problems and issues, linking general climate change discourses to the environmental changes they perceived in their surroundings. One exception could be found during the fieldwork, namely when examining the account of one official from Tinghir municipality, Ben (51 years old, Tinghir), who was a geographer by degree and who reflected deeply upon these issues. During a 3-h interview, Ben summed up all potential hazards for environmental/climate change in the Todgha Valley, where Tinghir is located, drawing a map and sharing all municipality documents. (His

interview also further served as a basis for Fig. 4.1.) The brief interview excerpt below offers an example of his concerns:

> *Ben:* The Pre-Saharan climate has a lot of drought, there is a lack of rainfall and water shortage. We don't have that much water here, because we don't have that much rainfall, nor a water dam to accumulate water. If there is rain, we have a lot of floods, coming from the Sahara, in the sand. We don't really benefit from these rainfalls, the river is then too full and then there are floods, going to the Sahara (. . .). We have a shortage of water in the underground aquifers, these aquifers have a 40 up to 60 metres of depth. If there is no snow [in the mountains], or not enough rain, we don't have sufficient water. The places where we have these underground aquifers, we build a water well that reaches until the underground aquifers, nevertheless, these underground aquifers are not always sufficient due to the lack of water and snow. They are overexploited due to diesel pumps to dig up water, which makes that we in Tinghir don't have that much water anymore.

During his interview, Ben mentioned a range of climate change-related factors – demographic (e.g. overpopulation, selective out-migration), cultural, social, and economic (e.g. organisation of land and heritage, water canals, lack of interest in agricultural activities) – and changes (e.g. less snow in the mountains, desertification), which he linked together. Such precise accounts and detailed information about local natural environmental changes are rather the exception than the rule. Ben's account is however not surprising, given his job and background in geography which have made him aware of these environmental changes and how they relate to the local context in Tinghir.

Contrasting with this scientific discourse on 'climate change', a far larger group of respondents did not approach the natural environment and visible changes herein from such a theoretical, macro-level perspective. When looking at the reasons explaining why some respondents perceive actual environmental changes within their local situation while others do not, the most determining factors for the development of tacit knowledge on environmental change were professional experience or having networks of people who have such experiences, or both. More precisely, for people in Tangier, this often meant that people had migrant networks in rural areas in Morocco; for people living in Tinghir, this referred to their broader social networks and personal professional experience. Especially in Tinghir, people who benefitted from some kind of educational training often preferred to work in office jobs or aspired to avoid working in agriculture, and it was this group that encountered more difficulties in applying their knowledge, meaning that the abstract climate change discourses are not applied to the local context. By contrast, people who were aware of environmental changes in their local surroundings had often obtained this knowledge through first-hand experience – whether from their own professional experience or from experiences within their family or social networks. One particular group, elderly and relatively poorer women, tended to rely on their personal work experience. This is understandable when looking at the learning methods of environmental change (experience within own networks vs formal education/statistics). Given the relatively long timespan in which environmental changes are visible to the human eye, this means that the elderly are especially aware of such changes and have tangible tacit knowledge on this matter. This is for

instance visible when going back to the interview extract of Chafik, earlier in this chapter. As a trek guide during his younger days, he was often confronted with tourists and the weather conditions in the region. This differs from the views of Ismael (male, 30 years old), who lived just outside Tinghir, near the Todgha gorge, who referred more to the natural cycles of precipitation levels or the location in the valley (near the gorge or not) to explain the weather changes and water scarcity when discussing the environment. He did not really perceive any long-term changes in the environment. Similarly, Faisal, a 30-year-old male, mentioned that he was 'temporarily' unemployed and that he occasionally worked as a truck driver in Casablanca. Faisal did not fully understand the question, nor saw any problems or changes linked to the environment. The real problem lay, according to him, in the lack of employment opportunities. The cases of Faisal and Ismael are illustrative of the situation of many of the young people living in Tinghir, who are mainly focused on the lack of employment opportunities as they experience long periods of unemployment. These young men did not even consider working in agriculture like their ancestors had, nor did they question potential underlying reasons for the lack of employment opportunities in their region of origin.

These differential perceptions on environmental changes according to age and professional experience also intersect with gender. Women in general were more likely to be aware of environmental changes over the years in Tinghir. This could be mainly due to gendered division of tasks in households, as working in the fields is considered a woman's job, illustrating the separate social worlds in which men and women live. Women refer mainly to environmental changes in terms of the work on the field, as is the case for Nour (female, 45 years old, lives in the environs of Tinghir, president of a women's association):

> *Nour*: Over the last years, there have been a *looooot* of changes. There used to be a lot of water in the oases, old houses made of mud, no drought and people were still into agriculture. In recent years, people have been paying too little attention to their fields. They plant crops that hardly need water and are easy to maintain, like the alfalfa[1] for their donkeys. This way they don't have to put too much effort in it [their fields]. You only have to maintain the alfalfa once or twice a year. Recently, only people coming from other places [the surrounding villages or nomads] work on the fields. People from Tinghir work in administration or migrate.

As Nour's interview extract demonstrates, gendered task divisions in society are reflected in perceived environmental changes. This is understandable since gender roles and gendered divisions of tasks with regard to land use reflect how much people are personally confronted with changes in their natural living environment and how much they depend on it for their livelihood as well as for their position in, and contribution to, the household (cf. Chap. 2, new economics of labour migration;

[1]Alfalfa is according to Britannica Encyclopedia (2019) defined as: 'Alfalfa, (Medicago sativa), also called lucerne or purple medic, perennial, cloverlike, leguminous plant of the pea family (Fabaceae), widely grown primarily for hay, pasturage, and silage. Alfalfa is known for its tolerance of drought, heat, and cold and for the remarkable productivity and quality of its herbage. The plant is also valued in soil improvement and is grown as a cover crop and as a green manure'.

Stark and Bloom 1985; Taylor 1999). During her interview, Nour reflected on environmental changes through the lens of changes in agricultural activities and possibilities. The interrelation between perceived environmental change, agricultural activities, and social structures in society shapes the vulnerabilities of people confronted with environmental change and further reproduces inequalities. For instance, women like Nour were very much aware of environmental changes as it impacts how much they can contribute to the household's income, and this is certainly relevant when being divorced, widowed, or living with an unemployed husband. Environmental changes reduce the importance of agriculture in society and leave agricultural work for those who have no alternative opportunities, and certainly no means to migrate. Hence, this is important in order to understand the distinct migration aspirations of people living in Tinghir and their perceived linkage to environmental changes.

Finally, due to regional differences in economic activities (cf. supra) these changes are more often noted by people living in Tinghir (and to a lesser extent to those in Tangier with relatives still living in similar regions elsewhere in Morocco). Respondents who work in agriculture refer to the history of water shortages in Morocco, the outdated agricultural methods and traditions, low living standards, and lack of employment opportunities.

The importance of first-hand experience for the development of tacit knowledge on this matter is clearly visible when looking at the accounts of people – also living in Tinghir – but who barely received any formal education or have experience working in agriculture. For this group, only the factors impacting their own lives are known. This was, for instance, the case for Houda (51 years old, widowed housewife, originating from Essaouira, now living in Tinghir with her mother and children):

*Interviewer*: During the last years, did the environment change a lot? Were there a lot of changes in nature?

*Houda*: Yes, even nature has changed (*laughs*). Like the year that just has passed, it was a lot colder, so much colder this year than the years that have passed. I think the last years were a bit drier, there was drought. But the last two years, there was so much rain and even snow. It has snowed, it snowed a lot last year.

*Interviewer*: And did this impact you this year?

*Houda*: Yes, really, because of the food, we needed heating.

*Interviewer*: You also felt cold in the house?

*Houda*: Yes, but my husband [who passed away last year] has put heating in our house, before he passed away, he installed a heating system, so this year we were lucky, we were very lucky. (. . .)

*Interviewer*: Was there always drought or did it become worse lately?

*Houda*: It wasn't always like that, the last few years, there was more drought in Morocco.

*Interviewer*: How did you feel that this drought has affected your life?

*Houda*: Me? I did not feel it, because you can buy maize, bread, and vegetables. You feel it in the prices, they increase the price, but also to buy for *Eid*, the prices increase as well.

*Interviewer*: So because of the drought, prices increase.

*Houda*: Even if there is a lot of rain, the prices of the vegetables increase a bit, but not a lot.

Overall, these accounts show that individual (work) experiences of respondents and their relatives – living nearby or in rural areas elsewhere – tend to determine the extent to which people perceive environmental changes in their immediate living environment without having learnt about this in school or from the media.

### *5.3.2 Explaining Environmental Changes*

As seen in the previous paragraphs, people who were aware of more scientific climate change discourses often failed to link this to their immediate living environment. The group of respondents who were not familiar with climate change discourses but had tacit knowledge of environmental changes through personal experiences and networks seemed to search for or rely on alternative explanations that are standard in climate change policy/scientific discourses. Since scientific climate change discourses were not used to explain the observed natural environmental changes, more references were made to the harmony between humankind and nature and to God as an explanation for the observed changes. For instance, Achraf (30 years old artist, living in Tangier, originally from the environs of Errachidia) mentioned the drought and the Sahara Desert in the region where he was born:

*Achraf*: It depends, the Sahara, it depends on which side of the Sahara (. . .) there is one part of the Sahara, where we don't have sand, and there is another part where the sea is already gone, where it has left '*son amour*' [his love] the Sahara. . .

*Interviewer*: Did the weather change a lot the last couple of years?

*Achraf*: Yes, it has changed, it's mainly during the entire winter.

*Interviewer*: And what has changed there?

*Achraf*: Because there is no balance 'dans cette terre' [in this earth].

*Interviewer*: How come?

*Achraf*: Humans have forgotten the balance with earth

Claude [approx. 40 years old migrant from sub-Saharan Africa, who helps Achraf during their volunteering work, Tangier]: God makes it rain, it's really him.

*Interviewer*: So, is it God?

*Achraf*: Yes, there is a sign, it's a sign, you know, nature does not accept human fears.

When Achraf continues to talk about the relationship between humans and nature, he states that he should rely more on his senses and be more in balance with nature and love. Out of the sample, this view may be one of the most explicit in terms of

mentioning the harmonious relationship between humans, God, and nature. Other respondents also referred to God as an explanation for environmental changes and weather patterns and the acceptance of the changes in nature due to God's will, albeit in less detail. This is for instance the case of Chaima (approx. 55 years old, not educated, interviewed through male translator from the neighbourhood, Tinghir) and her 23-year old son who is a carpet salesman:

> *Interviewer*: In the fields, she [Chaima] notes that there is also a change in the level of water over the years. Is there a differential access to water or not?
>
> *Interpreter/Chaima*: The drought!
>
> *Chaima's son*: At the time, there was less water but nowadays, there is sufficient water to use for almost everything.
>
> *Interviewer*: So, back in the days, there was less water and now, there is more water? How come she thinks there was such a change in water?
>
> *Interpreter/Chaima*: *C'est Dieu!* (it's God), God has given us the rain, the snow, it's God.
>
> *Chaima's son*: Normally, it's a scientific question...
>
> *Interviewer*: Everyone can have their own views on the reasons for these changes.
>
> *Chaima's son*: *Voila, oui*, but I think that the women here, they explain the fact that we have more water today, they explain the rain. That is to say, that they see that there is rain, they see that the rains are collected in the earth, in the springs, that we have more water. This can be explained by [meteorology].

In this interview, the generational differences in the explanation of environmental changes (science vs. will of God/Earth) can be noted. Furthermore, from this interview excerpt, it is however unclear how the natural environment has been altered over the years (for better or worse; whether there is more or less water) and how the perceived changing weather patterns rely on personal observations that link their experiences of different time periods together. A similar example in which God plays a leading role in the explanation of environmental changes is the interview of Khadija (approx. 30 years old, with small children, nomadic lifestyle, no formal education, interviewed through female translator, Todgha Valley, Tinghir), who lost her cattle due to the sudden snow in the mountains near Tinghir in the months preceding the interview, and who came to the Todgha valley to beg tourists for some money for survival:

> *Interviewer*: And why do you think there is less rain?
>
> *Interpreter/Khadija*: She said, it's because of God. People don't behave properly and God . . . people are the problem.
>
> *Interviewer*: And what did people do?
>
> *Interpreter/Khadija*: They really believe in God and people always behave badly, and God doesn't like that. They always violate the rules, they do wrong, they lie. Women don't dress according to the rules: they dance, they don't wear veils [like the researcher at that moment].
>
> *Interviewer*: So that's the reason, God is not happy.

> *Interpreter/Khadija*: That's it! She [the respondent] says that if everyone works, everyone is happy, but if there is no rain. . .

As the harmony between nature and humans is perceived to be distorted due to human behaviour that disturbed God, repercussions are also framed from this perspective. As a consequence, environmental changes are not perceived as caused by human activity in terms of polluting, standards of living, and consumption patterns; it is rather interpreted in cultural and moral norms and values. For this particular group of nomads living in the surrounding mountain areas of Tinghir with hardly any formal education or long-distance travel experience, it also seems to be hard to imagine such polluting consumption behaviours, industries, and so on elsewhere that could tremendously alter the natural environment. Environmental risks are thus perceived by the local population but hardly considered to be something within their reach of control.

As illustrated by the last accounts of this section, different respondents refer to God's will and to nature as God's creation. This theocentric view of nature, or the prevailing religious beliefs, does not necessarily mean that all respondents always relate environmental changes to God, as is the case for the younger Yanis (27 years old, tourist guide with a Dutch girlfriend, lives in the environs of Tinghir). When confronted with the fact that many people living in the same area related weather patterns – and in particular, the lack of water – changes to God, he stated the following:

> *Yanis*: GOD? You know God (laughs)? GOD, if it's God. . . if I would say it wants rain now, where is it then!? If people are not nice, I can understand this. When people are not nice inside, I can't believe this but if they said. . .
>
> *Interviewer*: What do you mean with 'when people are not nice?'
>
> *Yanis*: Their hearts are black. They don't want nice things [to happen] for others. They just think of themselves. For instance, you are in the village, even when you're nice to each other, sometimes you want to pray for the rain (high voice) 'Oh pray for the rain! It will rain, when you pray' (laughs). [Explains more about Imilchil and rituals] You are not interested in this, you only think of the *khattaras* [traditional underground irrigation system] (laughs). You ask the God (laughs) and ask, '*why change the weather*'.

In his narrative, Yanis did not seem to be entirely against praying to God for help, he just felt that this was not the appropriate topic to be resolved by prayer. According to him, people prayed more for purity and for social and cultural activities, not for water or climate/weather pattern changes. He suggested that praying for water was a selfish thing to do, as by doing so, water may run out for others or in the future. These accounts demonstrate the various ways in which humans interpret environmental changes and position themselves towards environmental changes. These harmonious ways of dealing with environmental changes or framing them in their religious beliefs also impact their reactive behaviour towards such changes. As these references and explanations related to Islam and God only came to the fore at the end of my fieldwork, I realise that systematic attention should have been given to how perceptions of environmental change relate to personal and institutional modes of religiosity, impacting religious beliefs, commitment, or behaviour. Highlighting the

contradiction between statistical discourses of climate change on the one hand, and tacit knowledge based on working for considerable time in impacted regions or in agriculture, on the other, was already a first innovative finding. Second, linking these views to religion also challenges the Western dominant discourses on climate change and calls for a more cultural relativist approach to the study of perceptions of environmental change.

## 5.4 Conclusions

The aim of this chapter was to understand some of the prevailing views on environmental changes and human-nature relationships in Tangier and Tinghir and how they are embedded in local cultures and religions. In order to do so, the perceptions of environmental changes emanating from people living in Tangier and Tinghir were first set out, before explaining how they interpreted these changes. The focus of this chapter is a necessary step in the study of environmental migration since it links people's views with their abilities, perceived environmental risks, and subsequent adaptation strategies. Being aware of environmental change and its impact on people's lives is then necessary to further mitigate risks in the household (cf. new economics of labour migration) and, as a consequence, developing migration aspirations and trajectories (cf. Chaps. 6 and 7). This study clearly shows that not everyone approaches environmental changes from a purely scientific perspective nor are such changes easy to perceive by individuals due to their relatively large timespan. Although this may sound logical and not necessarily new from an anthropological, historical, and sociological perspective, this finding is often not recognised in environmental (or 'climate') change research and policy (e.g. IPCC 2014), nor are tacit knowledge and skills developed within local communities included in climate mitigation or environmental migration policies. The impact of this finding for research and policymaking on environmental migration and displacement should also not be underestimated, as this is a condition to link environmental change and migration for people involved themselves. In this chapter, two main research questions were investigated. The first examined the (potentially) perceived environmental changes in the immediate living environment of people living in Tinghir and Tangier. The second research question followed up on this and gauged how the same group of respondents interpreted these perceived environmental changes.

The answer to the first research question is that there are both inter- and intra-regional differences in respondents' perceptions of the environmental changes in their immediate natural environment. With regard to interregional differences, perceived differences in environmental changes often varied across living areas. Far more people were aware of environmental changes and associated discourses in Tinghir, compared to Tangier. These differences are understandable since they also encompass urban-rural differences in the importance of nature for survival and reflect distinct economic activities (cf. Bele et al. 2014; Howe et al. 2014; Wodon

et al. 2014; De Longueville et al. 2020). With respect to the intra-regional differences, considerable variation in perceptions was noted as well. Levels of educational attainment and access to migrant networks in Europe tended to determine whether respondents referred to scientific climate change discourses when discussing environmental changes. Nevertheless, this group of respondents hardly applied this knowledge to their local natural environment. Conversely, the tacit knowledge built up through the respondents' (or their relatives') work experiences in their natural environment or in agriculture (i.e. family members or migrant networks in Morocco) seemed to influence how much insight people have into the environmental changes currently unfolding in their local natural environment. Given these distinct views on environmental changes and learning methods (tacit knowledge and skills vs formal education/statistics), it is also not surprising that this was reflected in the knowledge of climate change discourses and perception of environmental changes within the local environment. Changes occur, in terms of a lifetime, in a relatively slow manner. Because of this, environmental changes are particularly observed by elderly for whom migration is not necessarily a valid option (cf. Adam 2005; Schewel 2019). The finding that age matters for the knowledge of environmental changes is important since these are not the people who are necessarily able or willing to migrate (due to their age and socio-economic status). Conversely, people with access to migrant networks through which knowledge is shared on 'climate change discourses' hardly apply their knowledge on climate change to their own living environment.

To answer the second research question, data analyses indicate that there are a multitude of explanations of environmental changes, which similarly seem to depend on the learning method of environmental changes. Some people experienced environmental changes over the course of their lives, seeing it as a part of nature's laws and as the will of God, as it is reflected as well in many verses of the Quran. The accounts of lower-educated respondents mainly suggested adherence to a rather ecocentric or theocentric approach towards the relationship between humans and nature. Others were far more familiar with 'statistical' climate change discourses, being aware of the Moroccan delegation in climate change conferences across the world and its leading position in Africa but failed to link them to current living conditions in Morocco. Finally, the described perceptions on environmental change can be framed within the overall prevailing views on nature and religion, within both Islam and the Amazigh culture. While no clear differences could be noted across regions and within these groups, seeing the extent to which people refer to their religious beliefs and cultural traditions, it is clear that the relationship between humans and nature is viewed from a more harmonious perspective, prevalent in both religion and local cultures. Although regional differences in respondents' accounts are noted, which may align with local Berber/Amazigh culture and Arab and Islamic identities (Karrouche 2017) between Tangier and Tinghir, no explicit references were made to these potential explanations for different worldviews and therefore require further research. The findings seem to indicate that it is mainly religious beliefs in general that matter in shaping people's ideas concerning environmental protection and changes. Similarly, in a previous study of Mertz et al.

(2010) in the Sudano-Sahelian zone of West-Africa, 'prayer' was mentioned as a way of dealing with environmental change.

The results of this chapter show that first of all, more attention in prevailing climate change discourses and policymaking should be given to the views of actors living in affected regions (Stern 2000; McLeman and Gemenne 2018; Khare and Khare 2006; Rigby 2016). Tacit knowledge and skills on environmental change and adaptation strategies should be better shared within and across local communities and inspire policymaking at the international level. Ignoring this may result in – for policymakers – unforeseen migration outcomes, patterns, vulnerabilities and maladapted policies and research frameworks. Second, data analyses indicate that the learning method of environmental change is important to incorporate in research and policy; for instance, in sensitization about climate change within Morocco, the co-creative development of collective and individual adaptation strategies to deal with (the consequences of) environmental change (cf. Kelly and Adger 2000; Hillman et al. 2015). In Chap. 6, links between perceptions of environmental change, perceived associated risks related to these changes, and the development of adaptation strategies will be set out in a more explicit manner.

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# Chapter 6
# How Environmental Change Relates to the Development of Adaptation Strategies and Migration Aspirations


The focus on perceived environmental changes and risks is a necessary precondition before people's vulnerabilities and abilities to migrate can be taken into account (Adam 2005). This approach contrasts with previous research on environmental migration that has mainly focused on the vulnerabilities of people towards environmental changes. This vulnerability approach is, for instance, widely used in reports of the Intergovernmental Panel on Climate Change (IPCC 2014) and refers to the potential loss or harm one encounters or could encounter when facing environmental changes. This vulnerability is assumed to depend on the nature of the physical risks one could be exposed to and inherent sensitivity one has. The latter refers, for instance, to the type of economic activities of a community. For example, communities that rely heavily on agricultural activities are more sensitive to water scarcity and suffer more from drought, than other communities. It is within this framework that migration is often seen as a potential adaptation strategy to deal with environmental changes (Smit and Wandel 2006; Gemenne 2010). However, this framework hardly considers people's own perceived vulnerabilities or risks or resilience towards environmental change. Hence, this vulnerability approach diminishes the agency of the actors involved and their active role in the development of migration aspirations and trajectories related to environmental changes and risks. Furthermore, as already stated by McLeman et al. (2016), the use of this framework of adaptation and the focus on the use of vulnerability may not encompass all drivers of environmental migration. This could certainly apply to the Moroccan context in which environmental changes mostly occur gradually and are to a lesser extent immediately visible to the human eye.

As shown in Chap. 5, the study of perceived environmental changes as well as the explanations given to understand these changes can be seen as a first step in understanding how environmental changes trigger specific decisions and behaviour (Moore 1995; Rigby 2016). When making a connection between perceived environmental change and behavioural change or responses in climate change policy discourses, one easily refers to the concept of 'climate change adaptation' (IPCC 2014). However, little is known about how these perceived environmental changes –



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especially in a particular Moroccan context – give rise to the development of adaptation strategies. When translating the adaptation strategies developed to deal with environmental change – a concept that is mainly prevalent in climate change policy discourses – into sociological terms, adaptation approaches can be seen as risk management practices that aim to reduce vulnerabilities due to climate change effects (Lidskog and Sundqvist 2012). Or put differently, perceptions of environmental change delineate the frameworks in which people perceive risks related to these environmental changes and anticipate or deal with the consequences of environmental risks. Therefore, building further on previous insights from sociology of risk (Douglas 1966), perceived and expected environmental change-related risks need to be taken into account to fully understand behaviour. This is important for the study of environmental migration as one first needs to understand how environmental risks are perceived before being able to examine how these risks are translated into actual migration aspirations and trajectories. When looking at migration theories, risk perceptions and spreading are also the starting point of the new economics of labour migration, which posits that households aim to diversify the risks brought about by environmental change (cf. Chap. 2; Hunter et al. 2015).

This chapter connects people's perceptions of environmental changes to the perceived risks, resilience, and adaptation strategies developed by Tangier and Tinghir residents. In doing so, attention is given to how the respondents themselves link environmental change to their risk management/adaptation strategies and migration aspirations and trajectories. These linkages are studied together with other migration motivations in order to map out the context in which environmental migration occurs and how it is conceived. This is necessary since in many cases, environmental factors only give rise to 'environmental migration' when they add up or interplay with other economic, humanitarian, political, or cultural reasons for migration (TGOFS 2011).

This chapter is innovative and adds to the existing body of literature as: (1) little is known about how perceived environmental changes are connected to migration aspirations by inhabitants in Morocco; (2) it includes the diversity of views on environmental changes and associated risks; (3) it considers environmental migration within a larger socio-economic and cultural context (see also Smith et al. 2012); and, (4) is situated in the Moroccan context where a wide range of (nation- or region-wide) adaptation strategies are being developed and implemented at the policy level (e.g., 2016 United Nations Climate Change Conference Marrakech; *Plan Maroc Vert*, cf. Chap. 3). Before setting out the empirical findings, I will provide an overview of the existing literature on the perceived environmental risks and how the linkages between environmental changes and environmental migration are studied in existing research.

## 6.1 Perceptions of Environmental Risks

Risk perceptions matter when discussing behavioural intentions to prevent environmental change (O'Connor et al. 1999). Three main aspects of (environmental) risks are important to consider for the present analyses in this book. First, as already noted by Douglas (1966), risks are socially constructed and depend on social organization. This is of particular interest when studying vulnerable groups within society since threats, such as disruptive consequences of environmental change, do not always come from outside society, but are related to problems within society as well. The study of perceived environmental changes and risks – especially of vulnerable groups within Moroccan society – could then give more insights into how these groups perceive the society in which they live and their position therein (cf. McLeman et al. 2016). This is even more relevant as environmental changes impact the livelihoods of people in very complex ways and interact with economic, political, cultural, and humanitarian factors (Mertz et al. 2009; McLeman and Gemenne 2018). Hence, especially people living in regions characterised by economic poverty, subsistence food production, and a low and highly variable natural production are affected by the disruptive effects of environmental change (Mertz et al. 2009).

Second, as demonstrated in the previous chapter, perceived environmental change and risks are shaped by religious ideas, beliefs, and approaches towards environmental issues (Rigby 2016). The vast diversity in cultural and religious differences pertaining to views on human-nature relationships is often overlooked in research (Salmón 2000). As also shown by the results of this study (cf. Chap. 5), there is no single perception or interpretation of environmental change across all members of one society. Additionally, in the Moroccan context, these perceptions and explanations are certainly not in line with the prevailing climate change discourses of the IPCC (2014) nor necessarily applied to one's immediate natural living environment. Furthermore, a wide variety of (mainly ecocentric and theocentric) views on the relationship between humans and nature suggest that environmental changes are not automatically linked to the development of adaptation strategies or migration (cf. Hoffman and Sandelands 2005; Rigby 2016). Many respondents make references to God and the harmonic relationship between humans and nature when discussing environmental issues. Introducing the wide range of human-nature approaches in current research is important because prevalent views in existing academic literature and policymaking on environmental issues place dominant Western perspectives on the human-nature relationship central. Consequently, these discourses fail to capture fully the decision-making processes of people living in non-Western societies like Morocco as they take on an anthropocentric approach (Rigby 2016). Such approaches assume a mastery-over-nature orientation, which is prevalent in Western culture and goes hand-in-hand with concern for environmental issues (Hand and Van Liere 1984; Vining et al. 2008). Hence, more insights are needed into the ways people perceive the risks related to such (perceived) changes in their natural living environment.

Third, risk perceptions related to climate change (and by extension, environmental change) are largely shaped and influenced by media, education, and scientific discourses (cf. 'reflexive scientization', a process in which scientific results and arguments are questioned, Beck 1992). These information channels play a crucial role in downplaying or exaggerating the risks of climate change (Zehr 2000). They thus demonstrate that risks are a social construct and that risk perceptions vary across social groups and contexts. The information channels used to learn about environmental changes are important to consider as they impact individuals' experiences of how environmental changes affect their living environment and standard of living (Gemenne 2010; Kelly and Adger 2000; Hillman et al. 2015). Additionally, as shown by the results of Chap. 5, the methods people use to learn about environmental changes and the associated risks differ across social groups and play a role in the extent to which people perceive an impact of environmental change on their immediate living environment and standard of living (see also Gemenne 2010; Kelly and Adger 2000; Hillman et al. 2015).

To summarize, risks are social constructs that vary across social groups and contexts, according to people's religious and cultural ideas, beliefs, and worldviews. Risks should be considered within their broader social, economic, political, and cultural context as well as media coverage. The focus on the study of risks is especially important when people are living in gradually-degrading areas. The slow degradation of the natural environment often makes it more difficult to distinguish environmental changes from other ongoing societal shifts. Moreover, it provides more space for the interpretation and calculation of environmental risks of people living in these regions. Consequently, people are able to develop appropriate strategies to counter the consequences of environmental changes.

## 6.2 Linking Environmental Changes and Risks with Migration

Migration, under certain conditions, could be seen as a possible adaptation strategy to deal with environmental change. For instance, as Gemenne (2010) argues, migration could be viewed as an adaptation strategy at a societal level, if it relieves demographic pressure or when remittances are actively used to diversify families' incomes or invest in other adaptation strategies. Hence, migration – whether seen as environmentally-driven or not – could be seen at a societal level as an adaptation strategy to deal with environmental change. However, at an individual level, the success of this so-called adaptation strategy is not so straightforward, nor is migration necessarily perceived as an adaptation strategy. It is important to note that people who do not perceive these risks in a similar way, or adapt their lifestyles to environmental changes regardless of their views, migration can still occur thus affecting how they frame their migration aspirations. This distinction between the conscious and unconscious development of adaptation strategies is important for

policymakers and community workers attempting to mitigate the effects of environmental change and assist people and communities in developing successful adaptation strategies. The lack of conscious development of adaptation strategies to deal with environmental change could result in maladaptation for a community in general or the lack of coordinated investments in the development of (organised) adaptation strategies to deal with environmental change. Ultimately, this may even lead to an increasing need to migrate or to increased vulnerability to deal with environmental change.

In the current body of literature on environmental migration and displacement, perceived environmental risks, as a precondition for people to identify with the 'category' of environmental migrants or search for alternative adaptation strategies to deal with these environmental changes in their immediate living environment, are hardly examined (Khare and Khare 2006; Rigby 2016). So far, only a few studies focus on the relationship between perceived environmental change, the development of adaptation strategies, and migration. The results largely indicate that weather trends are in many cases observed and lead to a change in agricultural practices. These changing weather patterns are not necessarily linked to actively-developed migration strategies but rely heavily on the socio-economic context of the families involved. Mertz et al. (2009) find that farmers in Senegal have a clear memory of the periods they suffered from extreme climatic conditions, as these disrupted their production; while the authors found a general decrease in excessive rainfall over the years, not all local inhabitants have remarked on this trend. Nevertheless, all respondents did notice more extreme droughts and longer periods of droughts over time. Interestingly, age effects were noted by the local population. Due to declining yields and fewer opportunities, young people left; their migration burdened the elderly who had to do more work. At the same time, these migration flows help to secure or diversify the household incomes of the older family members who stayed. The migration of relatively large groups of young people is then perceived to worsen the consequences of climate change precisely because of the heavy burden placed on the work of the elderly. It is important to note that the agricultural and livelihood changes are commented on but hardly causally linked in a direct fashion to climate parameters.

In another study, Bryan et al. (2009) focused on the perceptions of climate change, adaptation measures, and decision-making processes of farmers in Ethiopia and South Africa. Most farmers had tried irrigation, different crop varieties, planting trees, soil conservation techniques, and switching to planting dates. The study results indicate that these adaptation strategies do neither correspond to nor are not related to views on perceived changes in rainfall and temperature. Thus, although there is a range of perceived environmental changes, this did not directly influence respondents' farming practices. Adaptation strategies rather rely on credit, access to fertile land, wealth, and information about climate change discourses, and differ slightly according by country – i.e., Ethiopia and South Africa – and income. Similarly, in a third and more recent study, Jha et al. (2018) found that although perception of climate change is a prerequisite for the individual adaptation response,

socioeconomic conditions determine the vulnerability of farm households to climate-induced economic tragedy and social deprivation.

These studies suggest that environmental changes are noted, but not necessarily linked to the active deployment of adaptation strategies. This is especially not the case when it comes to migration aspirations or trajectories, which may not be surprising when looking at migration histories and the perceived human-nature relationship of the local population (Hoffman and Sandelands 2005; Adam 2005). For example, such was the case in a study by Boillat and Berkes (2013) on Quechua farmers in Bolivia. These farmers perceive climate change to be associated with social/environmental changes as a part of a larger cycle in which ancient/mythological times would return, thus these changes are interpreted as a reaction towards natural/spiritual entities that are considered living beings. Hence, migration as a social change is automatically related to environmental change. Furthermore, indigenous patterns of interpreting phenomena are considered an adaptive capacity and crucial to understanding human behaviour. As illustrated by Bolivian study, the interrelatedness of widespread ideas on the human-nature relationship within a local community need to be examined within a wider social, cultural, economic, and political context, and affects the adaptation strategies used to deal with environmental changes.

## 6.3 Results

Given the wide range of views and explanations on environmental changes and risks in the Moroccan regions studied in this book, it is not surprising that the perceived relationship between environmental changes and adaptation strategies, such as migration, is not so straightforward either. Additionally, environmental changes in Morocco mainly occur gradually, making it more difficult to view this relationship in a crystal-clear way as these shifts encompass a larger timespan. Sudden weather changes are increasingly noticeable, such as sudden snowfalls in the Todgha Valley, however, most changes relate to (slowly) increasing drought periods in an already dry region such as Tinghir and parts of Morocco (not necessarily in Tangier).

In order to gain more insights in the adaptation strategies deployed to deal with environmental change, such as migration, the results of this chapter are organized in two sections. A first focuses on whether and how people relate environmental changes and risks to adaptation/risk management strategies. A second section delves deeper into whether these adaptation strategies involve migration aspirations or projects. These accounts build further on the previous chapter and demonstrate that these perceived changes, risks, and adaptation strategies vary across social groups and regions in Moroccan society.

### 6.3.1 *Perceived Environmental Risks and the Development of Adaptation Strategies*

The data analyses show that the explanation given for environmental changes and the knowledge of climate change discourses matters for the development of adaptation strategies. This affects the development of risk management strategies and adaptation strategies in two ways: through risk perception and people's actual and perceived level of agency/ability to deal with such environmental changes. As shown in Chap. 5, there are multiple views and explanations of environmental changes. This seems reflected in the risks people perceive related to the natural environment and how people deal with such environmental changes. There are multiple ways in which people interpret their position towards environmental changes. The abundance of religious interpretations, harmonious views on human-nature relationships, and interpretations and knowledge of climate change discourses impact the development of adaptation strategies. Two main ways of approaching adaptation to environmental change are found in this study, which builds further on the perceptions and explanations of environmental change.

When environmental changes are seen as the will of God or as part of a natural cycle, responses are also more in line with these thoughts and more reactive. In doing so, people's responses are very much dependent on their resources and ability to deal with the consequences of environmental changes. Resulting already from previous analyses in this book, it seems that in the broad Moroccan context there are far more harmonious ways of dealing with environmental changes or people who frame these changes in their religious beliefs, compared to Western climate change discourses or international bodies working on climate change, such as the IPCC (2014). This seems to influence their preventive and reactive behaviour towards such environmental changes. This is shown by Walid's (31-year-old male teacher, Tangier) whose family migrated to Tangier before he was born:

> *Interviewer*: I heard that there is a lot of drought in Morocco?
>
> *Walid*: Yes, yes, we search for work, we fight life, to change our lives, to change our living standards. If we don't search for work, we're not obliged to work, we do projects, sell things, do commerce. . .it's like that.
>
> *Interviewer*: And those droughts you experience in Morocco, did it also impact the life of your father and his parents?
>
> *Walid*: They started their life in the drought, my grandparents, it was entirely in the drought, because they had to build their house entirely themselves. They built their house together with two other men, because men are like that.
>
> *Interviewer*: Do you also think they felt the need to adapt to drought?
>
> *Walid*: Muslims know how to live like that. If they find something to make food, they eat. If not, they accept it. We have to combat it. There is always a plan, every day, there is a plan, there is no stress, it is always like that. One day, I will eat chicken, meat, fish, a very nice fish of the day from the market, couscous, tajines, and another day I will not eat. I will eat milk and bread. We accept, because we go to work to fight against it, to have money, it's not because we like to do the work.

Walid suggests that people do not intend to combat these environmental changes but rather adapt their ways of living to the changing living environment. This also

means that the adaptation strategies used to deal with environmental change are part of a larger view on people's way of living. This cannot necessarily be controlled and, hence, contrasts with the prevailing idea of mastery-over-nature in Western culture (Hand and Van Liere 1984; Vining et al. 2008). This idea of lack of control related to environmental change is also partly related to the finding (cf. Chap. 5) that environmental changes are ascribed to God's will, complicating the ways people in which deal with the consequences of these changes. This can be illustrated by showing the discussion between Thami (62 years old, retired migrant returned from Europe, Tinghir) and the local guide Jamal (40 years old, local guide/journalist, Tinghir/Rabat):

*Interviewer*: Are there a lot of changes in the environment?
*Thami*: Earlier, we used to have the rain, we had water. In contrast to now, especially in this region here, Ouarzazate, Errachidia, Zagoria
*Jamal*: There is no rain, there is no rain!
*Interviewer*: And why do you think there are changes in the level of water in these regions?
*Jamal*: It's climatic (laughs)
*Thami*: It's God
*Interviewer*: How do people here respond to these changes in the level of water?
*Thami*: People adapt to the lack of water, to climate changes.
*Interviewer*: Is this also the case for you ? Do you also think there is a lack of water?
*Thami*: For the fields. This means that everyone makes a well, in front of their house, with a water pump, there is electricity, we have our 'garden' and we do what we want to do.

People are seen as adaptive to environmental changes even though the underlying rationale attributes them to God. However, no action is undertaken to alter the lack of water, as this cannot be changed. People cope with the consequences of the decreasing groundwater/precipitation levels by digging wells and installing water pumps. These are frequently-recurring adaptation strategies mentioned by people living in Tinghir, and by extension, the relatives living in rural Morocco of people living in Tangier. This also implies that the consequences of environmental changes affect the livelihoods of people in a more indirect way. Furthermore, they interfere with other societal changes that happen at a similar speed. Thus, focusing on the group of people who perceive environmental changes as part of nature or God's will, people search for adaptation strategies that are within their ability and feasible given the resources available to them to cope with the consequences of environmental change on their livelihoods.

When environmental changes are framed as part of a larger climate change discourse, this phenomenon is mainly perceived at a global level. Hence, the ways of dealing with global climate change are also seen on a larger scale, meaning that most individuals do not feel able or entitled to combat these changes. In the following interview extract, it becomes clear that Jamal – who links changes in the precipitation level to climate changes – also more easily sees how these changes relate to the development of adaptation strategies:

*Jamal*: There is nothing. We have the mountains, the wind, we know the 'Gorge de Todgha'. There is a lot of international interest, but there is not enough structural equipment. It's an international zone that deserves to become recognized as a natural heritage of UNESCO, but

the association that deals with the gorge wants to let it be recognized at the national level, to end up, with UNESCO recognizing it as a heritage. The dams, every winter we suffer from desertification. We suffer from the drought. Imagine what would happen if there are dams that could keep water. Here, there is only one dam next to the route, luckily, but these dams need to be constructed by large companies and so on.

Due to his knowledge of climate change discourses, Jamal seems to link adaptation strategies more easily to environmental changes such as desertification and drought. As global phenomena such as environmental change often require large-scale solutions, such as the building of dams, this often requires a bird's eye view on the linkage between both. Thus, despite the need to invest in local or small-scale solutions to deal with the decreasing revenues due to environmental change, acknowledging this climate change discourse often reduces the intentions and the perceived capabilities to develop large-scale adaptation strategies, as suggested by Loubna (25 years old female student, Ouarzazate):

*Interviewer*: What do people now do – many people still living in the countryside and they see that the climate is changing: how do they deal with it? Some migrate and what do the others do?

*Loubna*: Some migrate, some keep praying [laughs] and being hopeful. And they tried to find some solutions to the problem. Just to survive. Because they are not powerful enough to do something which will stop this climate change. So they're just trying to find solutions to their daily problems, for example, if they know that, for a certain time, they will not have water, they will just make some wells, so that they get some money, some loans or they get some money from their family, so that they can make sure that they will have enough water. Even if it doesn't rain, they make it automated, with the motor, so that they can have the water, even if it's not raining. They can water their crops.

*Interviewer*: And they receive money from their family or?

*Loubna*: Yes, here families in Morocco help each other. For example, if I have some family members who are poor in the countryside, and I know it. . .if I want to help someone, even in my religion I should help them first. I can't just go in the streets and help anyone, because I know that I have someone in the countryside for example, or even a neighbour who is my relative, it's better to help him first.

*Interviewer*: And how does it work like. . .do they ask for money or?

*Loubna*: Yes, they ask for money and sometimes they are very shy they don't ask but people know that they are needy. They help them.

*Interviewer*: Ok and all the money is then really used for this well or. . .?

*Loubna*: For this well or for this specific thing, for this motor or just so they give them the money and they are free to do with it whatever they want. . . Sometimes they will just go and purchase some things that they need for their house.

*Interviewer*: Do people often help persons or projects?

*Loubna*: They help people right here. They don't put so much thinking into it because they are just individuals, but some associations help projects. Some associations, some organisations, that aim and support people in those very difficult areas. They support projects like. . .ehm. . .I forgot the name of one of the organisations. . . It's a governmental organisation supporting projects in the countryside, to help people cope with climate change and the difficult conditions they're facing.

*Interviewer*: And do they really see a change in climate change?

*Loubna*: No, we cannot see any climate change. Why? Because those people in the countryside or even in Morocco, it's not really the cause of this climate change. Yes, let's be honest about it. We're just the victims. Because the ones who are making so much money, who are very strong, they have very strong industries and economies, they are the ones

> affecting the climate in general. And those poor ones, they are the ones paying for the moment, but afterwards everyone will pay the cost of this.

As this interview extract suggests, the use of adaptation strategies very much depends on the resources people have at their disposal and their power to change this in their immediate living environment. This could also explain why risks related to environmental changes are less pronounced in respondents' accounts, and why most of them mainly referred to coping strategies as a survival means. Finally, it should be noted that the consequences of environmental changes affect the livelihoods of people in a more indirect way and interfere with other societal changes that happen at a similar speed. Consequently, people attempt to deal with the consequences of environmental change in order to improve their living standards or secure their livelihood. Most are not able to set up larger-scale projects that benefit the entire community and could prevent environmental changes from happening or deal with the long-term effects of environmental change. Moreover, the lack of unified discourses on environmental changes at a local level and the lack of an overview of all possible adaptation strategies may also cause people to 'merely' adapt as individuals/households to the human consequences of environmental change within their own capability.

### *6.3.2 The Link with Migration?*

In this section, data analyses are presented on how environmental changes are perceived to relate to migration, and actual migration motivations. Overall, as shown in the previous section, individuals and households try to secure their livelihoods or living standards by taking measures that fall within their abilities. Since not everyone is able to do so, migrating to another place may become an appealing solution aimed at diversifying the household's income and at cutting connections with the natural living environment (cf. Gemenne 2010). Given the wide range of interpretations of environmental changes and associated adaptation strategies, the data analyses show that, for many respondents, it seems difficult to perceive a direct relationship between environmental change and migration. Compared to more practical solutions perceived to enable households to deal with the immediate consequences of environmental changes such as drought and water scarcity, it seems that this direct relationship is even harder to perceive when it comes to 'migration as an adaptation strategy' because of the complex interplay of factors underlying migration aspirations and trajectories (Van Mol et al. 2018).

As discussed in the previous section, respondents' perceptions of environmental changes are a first condition to actively link migration to environmental change. In Chap. 5, Budur (female, 24 years old, secondary education degree, Tangier) perceives environmental changes as something from ancient times. Consequently, when Budur is being asked about environmental changes in her living environment and as

a potential reason to migrate, she does not really see Morocco as 'the place' where this is happening:

> *Budur*: Climate changes. . . I don't think that's the reason [to migrate]. You really don't feel that much of it here. In Belgium, people feel it, it just snowed there [in March], so that's weird as it is spring. You don't really feel it here, so it could not be really a reason [to migrate].
>
> *Interviewer*: Do people here talk about climate changes?
>
> *Budur*: Ehmm. . . not really, they don't really do that, as you don't really notice it here. If you would sit here last year, at the same time, it would be exactly the same. I am talking now about the last couple of years, what I experienced. People talk about it, but it's rather short, and relates more to other countries than Morocco itself.
>
> *Interviewer*: Which countries?
>
> *Budur*: Sometimes, people talk about France, and the weather, what happens there, like it snows or something similar, but nothing special. Rather, discussing the news.

Apart from the importance of the explanations and perceptions of environmental change, reasons to migrate are numerous and frequently perceived from an economic, political, or family perspective. Therefore, the links with environmental factors are often blurry. For instance, Faiza (28 years old, return migrant from Belgium, currently living in Tangier) does not see environmental changes as sufficient reason to migrate. Her account illustrates that, since people are used to living in the drought, there should be other reasons motivating people to migrate:

> *Faiza*: It's not a question of drought, it's because people want to improve their lives.
>
> *Interviewer*: And what happened to agriculture?
>
> *Faiza*: The region is known for its agriculture, but this year we had a lot of rain, so it was a good year for agriculture. Even with regard to the filling of the dam, I heard that they managed to fill already 77 per cent of the dam with water, *ça va*. Two weeks ago they even had floods in Tangier, because there was so much water.
>
> *Interviewer*: And who did it affect?
>
> *Faiza*: Big companies, who are next to it. Because, really, last week, water entered the office, but luckily did no water damage.

While drought and water damage are acknowledged by both Faiza and Budur, this is not perceived as an immediate call for action or providing sufficient grounds to migrate. As Walid's account earlier already shows, people accept environmental changes to a larger extent and learn how to adapt their lifestyles in reaction to them. Faiza explicitly mentioned that it is just not a adequate reason to migrate and that 'superior' reasons, such as searching for better work opportunities, are more decisive in migration aspirations and decisions.

When asking respondents about their own migration aspirations and trajectories, it becomes even harder to see the extent to which environmental changes led people to migrate. Most respondents linked changing living standards to the need or the aspiration to migrate. Only people working in the agricultural sector or who were familiar with agricultural activities through social networks – which was generally more the case in Tinghir compared to Tangier – seemed to relate the deteriorating natural living environment to migration aspirations and trajectories. This was the case of Mouhcine (33-year-old café owner, Tinghir) and his male friends:

*Interviewer*: Did you see a lot of changes in the environment?

*Mouhcine*: Ah yes! A lot has changed!

*Interviewer*: In which way?

*Mouhcine*: We had rain during summer, but there was also the cold and the sun.

*Interviewer*: And how did this change?

*Mouhcine*: I don't know (laughs)

*Interviewer*: What do people do to adapt?

*Mouhcine*: They are forced... they are forced.

*Interviewer*: What do they do? (...)

*Mamoun* [friend of Mouhcine]: People migrate

*Interviewer*: They migrate

*Mamoun*: There are people who try to adapt, *voilà*, and start from one of their ideas to do an effort in agronomy, because here, we don't have large fields. It's just a small field to help people live and survive, nothing more. It's not a business agriculture.

*Interviewer*: Large...

*Mamoun*: Indeed, it's just an autonomous agriculture, to live and feed, voilà, only cows and sheep. Cows are only to get some milk, they put some effort to survive, they install new irrigation techniques, like drip irrigation.

*Ghali* [other friend of Mouchine]: It's a modern irrigation technique to conserve water since water is scarce so we have to save it. We have to do that so there is enough water for everyone. You shouldn't spill water. To conserve water and don't waste any water, you need drip irrigation to irrigate the small fields.

*Interviewer*: Thus, this *goutte-à-goutte* system...

*Mamoun*: *Goutte-à-goutte*, it's an irrigation technique, which allows us to irrigate the trees. Because earlier [starts to draw water irrigation canals], we had these water canals like this, which led to a lot of water waste, they waste a lot of water in the fields and they don't serve agriculture a lot. That's why they dedicate a lot to... it's like, only farmers do that, it is very limited. The majority are '*des chercheurs*' [seekers], most people don't waste their time on things like that, they migrate to Europe or larger cities.

Similar adaptation strategies are mentioned by Loubna (25 years old female student, Ouarzazate):

*Loubna*: What can he or she do, other than praying?

*Interviewer*: Okay, so people are too poor themselves to set a bigger project? So people that have livestock, do they really settle projects to go against this climate change?

*Loubna*: To cope with it? Yes, yes, they make some modifications to the weather. They're living their daily life and they're fattening for example their livestock, and the type of plants they're buying, sometimes they might buy some genetically modified grains...which will resist against the very high temperature and sometimes very little water... Also sometimes they will buy milking cows who can support the change in climate. They are doing some things because they see: 'Oh, I bought this type of grain and my neighbour bought the other type, and his crops are better than mine, why is that?'. And they're trying to do that.

These accounts indicate that people living in Tinghir and its environs are dealing with relatively small agricultural fields or small livestock, which may also hinder people's investment or interest in investing in these agricultural activities. At the same time, the economic hardship faced by people complicates any investments or the further development of advanced adaptation strategies. This makes migration a viable option and the search for migration opportunities seems omnipresent within this community (see Chap. 7). These accounts are harder to find in Tangier.

Overall, for the majority of the respondents who had migrated or who aspired to, the linkages between migration and the changing natural environment were overshadowed by the economic context and opportunities, as illustrated by the following insights from Loubna (25 years old, female student, Ouarzazate):

> *Interviewer*: Did it also affect you when you were thinking of your future, did you also consider environmental changes or. . .
>
> *Loubna*: I really did not think about it (laughs) Because I don't see it directly affecting me for the moment being, because I don't rely on, for example rain, to have food on my table. Okay, right now we are importing a lot of things, we have a lot of cities who have good crops. So we're getting enough food, so I'm not concerned about my future. But I know that it's a problem. But it did not affect my decisions in any way.
>
> *Interviewer*: And from all people, how many people do you think it affects their lives, living in Ouarzazate?
>
> *Loubna*: I would say all of them. Because Ouarzazate does not have, as I said, big companies so it relies on the traditional way of earning a living. Which is having land and growing some crops and having some animals. . .

Internal migrants within Morocco who are searching for a place to work and create a future in Tangier also faced hardships due to the economic context and political struggles, as shown by the case of Amine (28-year-old male, migrated from Al Hoceima, works in a clothing shop in Tangier). In Al Hoceima, he worked in a hotel, where he had to work 12 consecutive hours, which was quite hard work and left no time for leisure activities. For him, migrating to Tangier was so much easier since he found a better job in a clothing shop through his networks. When referring to his life in Al Hoceima, he explained that it was very difficult, mimicking gunshots: '*beaucoup papapapapadam*', recalling political conflicts and the omnipresence of the police in that region at the time. While these political conflicts are ongoing, he also expressed his own educational or professional aspirations as a 28-year-old man. Although the origins of these political conflicts are initially related to a potable water problem, Amine mainly commented about the lack of economic and future opportunities for him:

> *Amine*: Last year, tomorrow, and after tomorrow, and the day after, there won't be any work, no hope, you can't work in a restaurant for 12 or 10 hours. It's just very hard to work 10 hours for 1 euro maximum. It would be better to work for 8 hours, and have a house, shower, food, etc.

Amine's account demonstrates very well the overall importance of migration and the development of migration aspirations when people are living in difficult living conditions, whatever the reason may be. The lack of any perceived linkage between environmental change and migration – or the presence of such a relationship – does not seem to hinder the development of migration aspirations and the desire to migrate to places with better opportunities or achieve personal dreams. While Amine referred to the current context, since he was also relatively younger, similar references were made when going back in time, as shown by the account of Zakaria, a 67-year-old guide, living in Tangier, who in his early years migrated to Germany, where he worked in a circus until he was injured. By having a closer look at

Zakaria's interview, similar cycles, of people migrating from Al Hoceima to Tangier, due to water issues are present:

> *Zakaria*: And most people like me, who came to Tangier, before, when Tangier got independence. They thought they could go to Europe and they find everything easily. Most young people, they dream about Europe, they think it is paradise there. It is not a paradise. There, if you cannot work, you cannot live. You know this, you are a German and know what is needed in Europe. And at that time, getting a passport was very hard here [in Morocco], especially for the second time [in his case], and also costs people a lot of money. And for me, when I turned 19 years old, I got my passport because I was having a contract, that was easier to get a contract. Thus, people, when they come here [Tangier], they find somewhere to live. That's the first thing they are searching for, and the biggest problem is that they don't speak Arabic, they speak Berber. Most people here don't speak Berber. And when people, when they come here [Tangier], and they find no opportunity to go to Europe, they stay here, they marry. They make children. The problem lies rather in the future. When their children grow up, they try to force them to do the things they want, the parents. And in the old days, this worked out good but now these things don't work anymore.
>
> *Interviewer*: Why don't they work anymore?
>
> *Zakaria*: Why don't they work anymore? Now, young people are getting smarter. They think that love doesn't come after marriage, but that the love comes before marriage. As it depends on the person you marry, for me, for example for myself, I wasn't in love with my wife, until I married her. Only 3-4 years after our marriage, I fell very strong in love. We came in good touch with each other. And those people in love, they believe in life. Like, they don't believe in love, they think something is easy or something...but love sometimes is easy and in the meantime it's hard. It is hard to accept that. If you don't accept this person, you cannot marry him or her, that's a normal thing, and thus people escape from. We were hungry in 1948, the first people who used to come from the Rif mountains to here. It was a year of hunger. They did not find food, they found nothing.
>
> *Interviewer*: How come they did not find food?
>
> *Zakaria*: Because in that time, it hadn't been raining for 7 or 8 years.
>
> *Interviewer*: No rain...
>
> *Zakaria*: It hadn't been raining. And in the Rif, we have these problems. The trees get dry, no water, so, in that time, the Spanish were here, not Morocco, and the first Moroccans used to work with them as slaves, do you understand, but when we got independence from Tangier in, 1961. They start to receive people from Al Hoceima, from Nador, from Oujda, bit by bit, little by little, and they came here, and they created a big community of Riffians. We call it a Riffian community. They got help from the Jewish. It was a very big business here, people you know, stayed in houses (laughs) whatever. And some Jewish people who only spoke Jewish, they only spoke Berber and they made an arrangement with the Jewish, in '61.

As shown through Zakaria's interview excerpt, water-related issues had already resulted in the rural-urban migration of people decades earlier. Years of famine and water scarcity caused people to internally migrate to larger cities to find better opportunities and for survival. Tangier became a destination for internal migrants, searching for a better life, in Europe or Morocco.

An interesting finding that results from the comparison of the accounts of Zakaria and Amine – both internal migrants from Al Hoceima living in Tangier and either aiming to go to or having spent some time in Europe – is the ways in which they relate environmental problems to migration aspirations. In both cases, their individual migration trajectories were not framed in terms of environmental change. Zakaria was young when he migrated and wanted to work in a circus in Germany, while

Amine wanted to escape the worsening political climate in Al Hoceima and search for better opportunities in Tangier and Europe. While both referred to water-related issues, only Zakaria reflected on this on a macro-level and related people's desire to migrate with famine and the lack of rain. This demonstrates how difficult it is to apply this discourse of environmental migration to oneself. This may be because migration is always intertwined with the political, social, and economic context. Hence, individual migration motivations are linked to economic, social, humanitarian, and political reasons (Timmerman et al. 2010, 2014a, b; Van Mol et al. 2018).

At the policy level, it is a lot easier to tie environmental change and migration together. Ben (51 years old male, university degree in geography, works at the municipality of Tinghir, cf. Chap. 5), a local policymaker, easily discusses the relationship between environmental changes in his immediate natural environment and its consequences for migration. Hence, it is also easier to set up adaptation strategies at the policy level or from a distance than at the individual level. In the case of Ben, he set up a project that actively tied together his knowledge of both the changing social and natural environments. He departs from a more holistic approach to deal with environmental change by setting up a project that provides extracurricular activities such as a soccer field, invests in solar panels to cope with the lack of water for agriculture, and uses improved agricultural techniques and organisation to enhance the quality of life of people living in Tinghir and prevent people from migrating to (nearby) larger urban areas. As shown in the following interview extract, he relates the changing natural environment to migration:

> *Ben*: But climate change played and still plays a big role. . . eh. . . it's an out-migration factor. That's because, as I said earlier, here in Tinghir we do not have a lot of trade, we do not have a lot of factories, we do not have a lot of companies. So, there are limited work opportunities and sources to gain money. I did not want to wait. Here, we have a palm tree that will give me 30 kilos of dates or an olive tree that will give me 5 litres of oil or something like that. While we are a family consisting of 5 or 10 people. It's worthless. We cannot live like that with two palm trees or two olive trees. . . So, together with climate change, there is also the change of mentality of the generations. Today's young people do not want to work in agriculture anymore, so they look elsewhere. They go to the big cities of the world, or to Europe. And this problem of climate change is one of the other factors, among the causes that drove many families to leave Tinghir. It's a very interesting factor that played a role – and still plays – because in the areas surrounding Tinghir, there are areas that are affected by desertification and drought. They come here to Tinghir, they settle here in Tinghir and after a while. . . they look elsewhere.

Ben's macro-perspective on social, environmental and economic changes in the province of Tinghir, which is required for his professional position, makes him relate environmental changes to migration. This is especially relevant as it results in setting up a community project and contains the seeds of success to adapt to environmental change within a broader societal context.

## 6.4 Conclusion

While in recent years policy debates have exploded on the topic of environmental migration and displacement, there is still a large gap in the sociological literature on this topic (cf. Hunter et al. 2015; Van Praag and Timmerman 2019). This chapter aimed to fill the gap in the literature by focusing on the perceived environmental/climatic changes in one's living environment and how this relates to the adaptation strategies developed, such as migration. The findings from this chapter are innovative as they provide insights into the perceived linkages between environmental changes and migration and how this impacts decision-making processes. A better understanding of perceived environmental change in regions highly affected by such changes, ongoing adaptation strategies and decision-making processes is crucial to inform policymakers in order to promote successful adaptation strategies to environmental changes in one's living environment (see also Mertz et al. 2009; Bryan et al. 2009).

In the beginning of this chapter, more insights were given on the perception of environmental risks in general, and how environmental changes and risks are linked to migration in the existing body of literature. Departing from the idea that risks are social constructs that vary across social groups and contexts according to people's perceptions of environmental change (Douglas 1966; Beck 1992; O'Connor et al. 1999; Mertz et al. 2009; Rigby 2016), the data analyses show that few respondents actually referred to 'environmental risks'. Rather, the gradual degradation of the natural environment in Morocco leads to a continuous intertwinement between environmental changes and ongoing societal changes, making it quite difficult to distinguish clearly between the risks related to the environment and those to other societal factors, such as the lack of investments in upgrades to the local economy. Consequently, not everyone who perceives environmental changes will automatically see this as a risk and think of how to alter this natural environment or develop appropriate adaptation strategies. Similar to what has been found in previous studies (Mertz et al. 2009; Bryan et al. 2009; Boillat and Berkes 2013; Jha et al. 2018), environmental changes are noted, but not necessarily linked to the active deployment of adaptation strategies, and certainly not as a sufficient factor to migrate or to aspire to migrate. The immediate relationship with migration seems troubled.

When delving deeper into the ways in which people relate environmental changes and risks to adaptation/risk management strategies, it becomes clear that one's interpretation of environmental changes and knowledge of climate change discourses impacts how people deal with environmental change and think of adaptation strategies, at a local or global level, that could prevent more change or reduce its speed, or deal with environmental change at a societal/community level. For the group of respondents that tied environmental changes to the will of God or to the natural cycle, dealing with the changing natural environment coincides with dealing with everyday hardship and does not necessarily imply any means for individual action that could counteract this change. For the group of respondents that frames environmental changes as part of a larger climate change discourse, the level of

action and the capacities required to deal with such environmental change are often beyond the means of the individual or households, paralyzing people's intentions and capacities to react and develop community-wide adaptation strategies. Thus, when examining the development of adaptation strategies, one should consider the limited resources available of individual households confronted in their daily lives with environmental change as well as their power and ability to set up large-scale community projects.

As to whether migration aspirations or projects are also seen as a potential adaptation strategy for dealing with environmental changes, the direct relationship between environmental change and migration was hardly conceived as such. Rather, respondents mentioned a wide variety of reasons to migrate that mainly stressed economic, family, or political motivations. The results of this chapter indicate that many respondents tend to accept these changes and adapt their standard of living or search for alternative ways to improve their living standards. This also means that if people aspire to migrate, alternative or superior migration reasons are given that trigger their actual decision. In many cases, especially for younger people, this refers to the political or economic context in which they live or is associated with family reasons. Hence, individual linkages between environmental changes and migration aspirations and patterns are often hard to make. From a distant or outsider perspective, it is far easier to connect environmental change with migration, but in most cases, also not applied to one's personal situation. This is also partly due to the distinct sociodemographic characteristics and professional situation of the people who are more aware of these climate change discourses (cf. Chap. 5).

To conclude, the findings of this chapter clearly illustrate the need for co-creation of adaptation strategies between people who are confronted daily with environmental change in their immediate environment and those familiar with climate change discourses who are able to set up large-scale community projects or organise the use of coherent adaptation strategies within one region (e.g. the coherence of water wells to secure water or other forms of water management). Furthermore, in order to make people reflect upon the development of adaptation strategies, policymakers or community workers should coordinate the sensitization of climate change discourses that provide sufficient space for so-called 'alternative' views on these topics to enable all inhabitants to develop their own adaptation strategies and consider this within their community. Finally, such sensitization and coordination from (local) policymakers and community workers could also involve a wider migration strategy in which vulnerable groups also have their place and in which migration could be used as a successful adaptation strategy for dealing with environmental change. In Chap. 7, more in-depth analyses will be presented on the importance of considering local cultures of migration and other migration dynamics in the study of environmental change.

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# Chapter 7
# The Nexus Between Environmental Changes, Culture of Migration, and Migration Aspirations


In this chapter, I delve deeper into the role played by 'cultures of migration' in the development of migration aspirations in both Tinghir and Tangier, and how these cultures of migration interact with environmental factors. This chapter builds further on previous insights from *migration systems theory*, which posits that migration results in multiple flows of material goods, ideas and money (Mabogunje 1970; Levitt 1998). In other words, this theory states that migration results in more than exchanges and flows of people. By building further on the concept of 'cumulative causation' (Myrdal 1957), migration systems theory advances that migration results in the transformation of social and economic structures, facilitating more migration. This idea is crucial to fully understand the development of migration aspirations because it pays attention to how contextual feedback loops can either positively or negatively stimulate the further development of migration aspirations (De Haas 2010). Hence, cultures of migration are established through the information sent by emigrants that have left a given region and provide feedback on their migration experiences in the country of destination to their migrant networks living in their region of origin and which ultimately result in shared ideas and beliefs on migration in a particular region (Timmerman et al. 2014).

To study how environmental migration and the development of migration aspirations linked to environmental change are impacted by the existing cultures of migration in Morocco, the two selected regions, Tangier and Tinghir, are interesting cases to compare. Both regions have faced significant out-migration in the past (Berriane et al. 2010, 2012). Nonetheless, the consequences of migration do not necessarily lead to the development of similar cultures of migration (Timmerman et al. 2014). This chapter's focus is of particular interest when studying environmental migration dynamics since environmental factors could strengthen existing migration dynamics and build further on existing migration flows. At the same time, environmental changes could be a factor that led people to migrate in the first place and have later resulted in additional migration flows due to contextual feedback mechanisms.



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A first objective of this chapter is to examine the differences in cultures of migration between Tangier and Tinghir. Tangier is an internal migration hub and gateway to Europe and hardly experiencing direct consequences of environmental changes. Tinghir is a local migration hub from surrounding desolate areas that also experiences significant out-migration to Europe and larger Moroccan cities, and where people are more directly confronted with environmental changes. The comparison of the development of cultures of migration and migration aspirations within two interconnected but distinct regions provides very useful information about the interplay between the different factors leading to (environmental) migration. In the second part of this chapter, more attention will be given to how these cultures of migration and migration patterns in general contribute to successful adaptation to environmental change.

A second objective of this chapter is to explore whether and how migration can be used as a successful adaptation strategy to deal with environmental change (Gemenne 2010) in regions that have been familiarized with migration in the past and in which the consequences of migration projects are already deep-rooted in everyday life and organization (De Haas 2006). The inclusion of the study of cultures of migration and migration dynamics is especially relevant in the Moroccan case due to their migration history and the gradual degradation of the natural environment. The progressive nature of environmental changes in Morocco makes it more likely that these changes coincide with societal changes and ongoing migration dynamics.

To summarize, in this chapter I focus on the origins of environmental migration in a region that has been subject to slowly-evolving environmental changes. Doing so will help shed a new light on the entanglement between cultural, economic, social, and natural factors and migration drivers. Therefore, taking a closer look at this complex set of factors and how they evolve over time is crucial to understanding vulnerabilities to environmental changes, resilience, and the development of migration aspirations for people living in these areas (Wisner et al. 2004).

## 7.1 Migration Aspirations and Vulnerability to Environmental Change

Earlier studies found that environmental changes put all other migration stressors under pressure (McLeman and Gemenne 2018). When looking at 'environmental displacement and migration' (Piguet et al. 2011; McLeman and Gemenne 2018), the notion of environmental *displacement* is mainly applied to situations in which abrupt environmental changes (e.g., floods, tropical storms, landslides) force entire populations to move, disconnecting this displacement from the will and aspiration to migrate due to 'external environmental factors and changes' that lie beyond the human will and capacity. The concept of environmental *migration* includes a wider array of human mobility trajectories as it encompasses the entire range of people

who, due to some kind of environmental changes or factors, decide to migrate, regardless of the urgency of the displacement or type of environmental changes that lie at the basis of this decision (McLeman and Gemenne 2018). As I mainly focus here on the latter, which is especially relevant to the Moroccan case, this chapter helps to understand how migration dynamics gradually evolve and develop over time and are impacted by existing social structures.

The rather slow natural changes in Morocco allow more interference with other existing factors that determine whether or not people aspire or decide to migrate. The conceptual difference between abrupt and gradual changes to an individual's living environment is often very difficult to make and does not necessarily lead to clearly defined categories of types of migrants (e.g., climate change refugees vs climate change migrants; Bates 2002). This conceptual distinction matters especially to the extent to which people have time to prepare for migration, the clearly defined need to (immediately) migrate, and the perceived linkage between their migration aspirations and climate/environmental changes, as shown in Chap. 6. Furthermore, as I focus in this book on regions that can be both locations for in- and out-migration, this allows us to not only concentrate on people who have migrated for environmental reasons, but also on those who aspire to migrate due to environmental changes.

Investigation of the group that aspires to migrate, or those who would be very vulnerable to environmental factors but are not able to migrate, is methodologically very difficult (cf. 'trapped populations', Zickgraf 2018). Therefore, acquiring more insights into these groups is promising as it could help to gain more information to set up a broader framework on adaptation strategies to deal with climate/environmental changes and see migration only as one potential adaptation strategy amongst others. Processes preceding (environmental) migration are particularly hard to assess methodologically, which may be due to migration's interaction with the wider social context (Bates 2002; McLeman and Gemenne 2018). This is, for instance, clearly visible in research that links drought and desertification with migration across the globe, in which results are inconclusive and not straightforward (Piguet et al. 2011). It is in this regard that the concept of '*vulnerability'* to environmental migration, as conceptualized by Wisner et al. (2004), is helpful. This concept acknowledges the role humans play in the production of environmental hazards and their uneven dispersion. Vulnerability captures the chronic insecurity and exposure to risk, putting the unequal distribution of power and risk across the population at the heart of the analyses. Using vulnerability as a concept helps comprehend the complex relationship between migration and environmental changes that heavily depends on the prevailing types of environmental change, the surrounding socio-economic and political contexts, and the types of human mobility trajectories (TGOFS 2011; Piguet et al. 2011; Schilling et al. 2012).

## 7.2 Cultures of Migration

The impact of both environmental change and migration expands over many decades. Therefore, it is important not only to focus on the longitudinal impact of environmental change on people living in a particular area, but also to consider the cumulative effects of migration (Stark and Bloom 1985; Stark 2005; Myrdal 1957). The introduction of the notion of 'culture of migration' is therefore necessary to understand the development of migration aspirations and considers local and transnational networks that further shape the ability to migrate. Migration – especially transnational migration – could be made easier in regions with a prevailing culture of migration which stimulates additional migration or limit migration aspirations, as feedback mechanisms have already shown that migration can lead to lower social positions in the immigration country, jeopardizing the opportunities to send remittances (De Haas 2006; Gemenne and Blocher 2016; Simon 2018; Timmerman et al. 2014). The combined study of 'culture of migration' and 'environmental migration' is innovative for two reasons. First, the availability of migrant networks and particular cultures of migration impacts the opportunities to – individually or collectively – deal with the consequences of environmental change through remittances and/or specialized knowledge, expertise, and political power also affecting migration aspirations (e.g. De Haas 2006; Carling and Hoelscher 2013; Gemenne and Blocher 2016; Obokata and Veronis 2018). Second, both migration aspirations and environmental discourses are either fuelled or hampered by a particular culture of migration, blurring or strengthening the relationship between the consequences of environmental changes and migration aspirations. Migration is frequently used to diversify family income sources, regardless of the confrontation with disruptive environmental changes (TGOFS 2011; Gemenne and Blocher 2016; Carling 2014; Kusunose and Rignall 2018).

## 7.3 Results

### *7.3.1 The Development of Distinct Cultures of Migration*

As the results of Chaps. 5 and 6 have shown, respondents' views on the perceived environmental changes in their immediate living environment vary across and within regions, depending on sociodemographic features. This finding is helpful for understanding the development of migration aspirations induced by environmental change and the distinct vulnerabilities towards them, resulting in distinct needs and aspirations to migrate. Both regions have faced extensive emigration, and almost everyone knew someone living abroad or who migrated earlier. This was clearly noticeable when simply walking around in Tangier and Tinghir: everyone had heard of Belgium. More strikingly, many people immediately responded that they knew someone who went there, had (distant) relatives there, or knew that a lot of people

had migrated from Morocco to Belgium (and other European countries). Some words like '*goedendag*' (have a good day) or '*dank je wel'* (thank you) were already shouted at me when passing by (again) on my daily routines towards the place where I stayed. First impressions were that in Tangier, street vendors in the neighbourhood where I lived immediately told me that 'they were better than the ones in Belgium', repeating that Moroccans in Belgium were lazy, did not work, and that I should distinguish them from the 'hard working Moroccans' like themselves. By contrast, in Tinghir, people rather stressed how many people they had known who had moved to Europe, but that they themselves were not willing to move, as they did not like 'the stress in Europe' or could not 'bear with the cold' to justify or claim that their stay in Morocco was positive. Others rather searched for marriage or work opportunities and promptly personally asked me for more information on both. I interpreted the recurring discourses told on the streets during my daily walk as clear signs of the existence of well-established cultures of migration. In Tinghir, this culture of migration was also visible when walking in the city centre and observing old men sipping mint tea, all spending their retirement years between Europe and Morocco. Hence, in line with migrant networks theory, I asked more profound questions on these cultures of migration during the interviews.

The first interviews already showed that nowadays, migrant networks are not equally accessible for people coming from the lowest social classes, which are also the most vulnerable to the consequences of environmental change. In Tinghir, especially, nomads and very poor families – in contrast to their surrounding social environment – hardly had any contact person or family member who had migrated outside Morocco. To make sense of the data and to understand how seemingly similar natural phenomena are perceived differently, the consequences of high emigration over the years are explicitly considered during analyses in order to understand local structures and corresponding views. Tangier and Tinghir are mainly characterized by two different cultures of migration with distinct economic profiles. Whereas in Tangier migration is already perceived by people from higher or middle classes from a more critical perspective, the positive sides of migration are mainly stressed by respondents living in Tinghir and less socially-advantaged people or recently arrived migrants living in Tangier (i.e. internal migrants who migrated for better opportunities to larger cities). These diverging cultures of migration, between and within regions, seem to be related to 1) the discourses heard by their relatives/ migrant networks; 2) the relative position people occupy in Moroccan society and in a particular region; and, 3) the reliance on migrant remittances and access to transnational migrant networks. I first discuss the prevailing cultures of migration for each region separately.

#### 7.3.1.1 Regional Differences: Tangier

As Tangier is a vibrant, harbour city, with numerous international networks and companies as well as internal migrants, migration is a part of everyday life. On the

streets, some inhabitants wished to distinguish themselves from the '*lazy Moroccans in Brussels who do not work*', by stating '*we work here, we like to work*'. They promoted the good values of Moroccan life, such as working hard, and by doing so, cast themselves in a positive light. The immediate impact of migration is less clearly visible for everyday life, as it is obscured by the large diversity of professions, city life, international companies, and the investments of the Moroccan King and government. Greater variation in education levels and livelihood strategies made people rely to a lesser extent on remittances from Belgium (or other European countries) and turned the impact of migration into an individual or structural question.

Migrant networks provide support by channelling individual remittances during religious holidays or festivities, by supporting the ability of their relatives' children to attend private schools, or by contributing to healthcare costs. On a more structural level, associations and companies are set up with support from migrant networks and European governments. Many inhabitants have a personal (intergenerational) migration history that ended in Tangier. This is for instance the case for Hasna and Sarah (33 and 38 years old), two sisters whose family migrated to Tangier when they were respectively 13 and 18 years old:

> *Sarah*: The reason we came here was that, before the death of my father, he decided to come and live here as there was nothing to do in the small village where we lived. There was no big company, it was more or less an agricultural village, the agricultural life. He migrated to give us a better future. That's why he decided to come to Tangier. (...)
>
> *Interviewer*: Do you want to stay in Tangier or migrate later elsewhere?
>
> *Sarah*: Another city in Morocco?
>
> *Interviewer*: It doesn't matter where to?
>
> *Sarah*: No, well I have never thought of migrating outside Morocco. Only when I visit for example my sister or my brother yes, but to really live there? No, I couldn't, I have a lot... I love to live in Morocco, and I even don't want to change from the city either. It's without a doubt that I adore Tangier (laughs).
>
> *Hansa*: That's for sure
>
> *Interviewer*: What are the things you like about Tangier?
>
> *Sarah*: A lot of things here in Tangier, the seaside, the quietness, there is a big city, it's *superbe*.
>
> *Hansa*: It's beautiful, it's magnificent.
>
> *Sarah*: If we would return to the South, that's also super, but to live, for me, not really, I only want to go on holidays there, that's it! (...) there is no nature, it's an industrial city, there are many companies here, it's the economic capital from Morocco.

When Sarah and Hansa later mentioned having some family in Europe, they explained that some of them had returned from abroad due to economic reasons:

> *Sarah*: I think the majority of the people who travel across borders, migrate to work, to improve their material capital, to find work. For sure, Europe is more civilized than Morocco, but they don't always respond to the needs of the migrants. People find work here in Morocco, as you have to work. I personally have a brother who travelled to Spain, he

stayed there for I don't know how much time, and then he returned to Morocco. He returned after about 10 years, due to the [economic] crisis.

*Interviewer*: Are there a lot of people who return?

*Hasna*: *Ah ouiii*

*Sarah*: Especially from Spain, there are many, but even from Belgium. There is nothing there, they left for Spain for work, but they couldn't find work.

This interview extract shows that many people do not automatically perceive migration as equated with success because people can be very vulnerable in European labour markets – especially due to the recent economic crisis. Furthermore, when people return to Morocco, they are more likely to return to larger cities – again, to improve their chances on the labour market – which increases the visibility of return migrants for people living in Tangier. When comparing life in Europe with life in Morocco, many people stressed the differences in lifestyles, the nicer atmosphere in Morocco, and the '*failed integration in Europe of many immigrants'*. For instance, Faiza (female return migrant from Belgium/France, 28 years old), who now works in a large international company located in Tangier, recalls experiences of discrimination on the tram and certainly does not think of returning, stating:

*Interviewer*: Are you planning to migrate another time in your life?

*Faiza*: I am good here, one year and a half, I asked my husband whether he wanted to return to Belgium, and he said no. He told me that he felt good here, and did not want to return. Even when we go there for a week, we don't understand the people. The majority goes to a psychologist or a psychiatrist. Here, we are our own psychologists. If I have a problem, I call a friend, I tell her everything, she comforts me and gives me advice. In Europe, people don't even have time for themselves, how can you make time for someone else?

This account shows that Faiza clearly appreciates Morocco more (after she left to enrol in higher education in Europe), and cherishes Moroccan culture. Ali (male, 65 years old) similarly mentioned the presence of a warm climate in Morocco and felt quite hostile towards Moroccans who had migrated to Belgium and France, despite having served a ten-year prison sentence in Morocco for expressing his political opinion and having a lot of family living in Belgium and France. At the time of the interview, he had just sent his daughter – who had been unemployed for a long time in Tangier despite her higher education – to his family in Belgium without a residence permit. Nevertheless, he remained sceptical about the integration of Moroccan immigrants in European societies, such as Belgium and France. He argued that the migration project had failed as many Moroccan migrants continued to hold on to their own laws, contradicting the ones of the immigration country. He referred to the lack of recycling ('*Why don't they use the correct colours of garbage bags?*') or the fact that most migrants lived in ghettos such as Schaarbeek and Molenbeek in Brussels. A third example he gave touched upon the education of children, for which he felt that migrants placed their own punishments above the ones of the government. He narrated the story of a man whose son used drugs and behaved badly in Dutch society. The first time, he beat his son; the son turned him in and he had to go to jail. The second time, the son wrecked a stop sign, so the man

turned his son in to the police as he could not beat his son again. A third time, the father brought his son back to Morocco and took away his passport. As the Dutch authorities realized the son did not return, they searched for him, returned him, and put the father back in jail. According to Ali, these examples show how difficult the integration of Moroccan immigrants have been over the last decades.

These accounts illustrate how many Moroccans, who report being satisfied with their lives in their country, do not even contemplate migrating to Europe. The cold and unsupportive atmosphere, distorted work-life balance, higher stress levels, the '*bad climate*' (i.e. a lot of rain and not so much sun, cf. Chap. 5), integration difficulties, and enduring experiences of discrimination, do not lead them to search for ways to migrate. For this group of respondents, migration was rather seen as something from the past, as Morocco – and especially Tangier – is experiencing an economic revival and a recent rise in investments in the region. Furthermore, the idea that European borders are increasingly closed and that it has become harder '*to get in*' is also prevalent, causing people to rethink and reframe their migration aspirations. In other words, if one is happy in Tangier or Morocco, why even bother going to Europe and putting so much effort in it? Many people who were satisfied with their lives or jobs or both, did not consider migrating to Europe. This seemed particularly true for people with a (relatively) higher educational level, people with social and family networks in Tangier or those who had grown up in Tangier. '*Real Tangériens'* have the reputation of enjoying life and adapting their life rhythm to the harbour schedules, starting late and working late. The existing inequalities in Moroccan society, which are particularly visible in cities like Tangier, are also reflected in the ideas about migrating to Europe. While the overall perception in Tangier is that migration is a 'failed project', this is not necessarily reflected in the aspirations of those who are unemployed or experience harsh working conditions in Morocco.

When looking at all the accounts of the respondents living in Tangier, a divide is clearly noted between people who were from Tangier or who had built up a good life there and recent internal migrants who had come to Tangier as part of their fragmented journey or in search of better opportunities. This is, for example, clearly the case for Imane (female, 35 years old, coming from Oujda) and Amine (male, 28 years old, coming from Al Hoceima), who had both migrated in search of better legal and economic opportunities, and were '*on their way to Europe*'. Amine did not foresee any job opportunities in Al Hoceima, was already married to a Belgian woman of Moroccan descent but had not been able to migrate yet. He was forced to interrupt his studies to obtaining his high school diploma when he had take care of his parents after his father got sick. While initially, his main migration aspirations were linked to his love life, he described very difficult conditions in Al Hoceima, adding that he did not want to return (see also Chap. 5):

*Interviewer*: A lot has changed during the last years in Al Hoceima?

*Amine*: Life is difficult now, a lot of [imitates gunshots] the police check people a lot, they enter your house, you cannot eat, you cannot enter the hospital, even when people have

cancer. They enter your house and then *blablabla* and then *taktaktaktak* and then everyone have to go to the police station, chained.

*Interviewer*: In your family?

*Amine*: No, not my family, but friends. Al Hoceima is a beautiful city.

*Interviewer*: Do you want to return?

*Amine*: To Al Hoceima? No, totally not! *Jamais*! My family came to Tangier, they don't want to go back to Nador. [starts crying]

Later in the interview he also described the problems they had encountered with the dam in Al Hoceima, which the government built in just a month to solve water issues. Unfortunately, the dam had burst, flooding or damaging many houses in Al Hoceima. According to Amine, instead of helping the inhabitants, 'they' [the police] killed people. The work was conducted by Portuguese labourers, and therefore did not contribute to the employment of local workers. As all these problems resulted in a lack of job opportunities, Amine referred to 'work' as the main driver for migration. At the time of the interview, he worked in a shop in Tangier, owned by his wife's grandmother and was awaiting a visa to go to Belgium.

Similarly, Imane, a single mom who suffered from a lack of social acceptance linked to her divorce and abuse by previous employers, was in constant need of money to provide for her daughter and her daughter's future. Imane's child was temporarily staying with Imane's sister and Imane was now working as a maid, under sometimes very harsh conditions. She deemed this life necessary to find a way to go to Europe, and therefore also to a great extent did not enjoy living in Tangier. She missed her daughter, lived in a small room, and worked hard. Having no access to migrants' discourses she had no way of knowing that life in Europe would not necessarily be better than the life she was living now. She mentioned the lack of economic opportunities and political conflicts that make it very difficult for unqualified youth to find a job in her region of origin. Indeed, in that region, people have long been confronted with water scarcity and drought.

*Interviewer*: In Oujda, are there a lot of environmental problems, such as water scarcity or drought?

*Imane*: No, it's normal there

*Interviewer*: You know a lot of people who work in agriculture?

*Imane*: In Oujda? Yes, a long time ago, young people in Oujda worked well. You know what they did? They worked together with Algeria, you know what, it's always the same, only the young people from Algeria and Oujda used to work, but now they can't. It's already been a year since they have stopped working together with Algeria, there are a lot of problems now and the borders are closed tight. They have problems with the King [Sic] of Algeria, but the young people stay without work. I am talking about the people who did not finish school and have no work now. Oujda is a small village where there is not a lot of stuff to do, the only thing used to be working in Algeria.

*Interviewer*: And what do the youngsters do right now?

*Imane*: Sometimes, they sell stuff, but they act like they are thieves, because they need money. Youngsters from 18 and 19 years old, who don't have a job, become thieves and

> steal. It's a real problem, that's the biggest problem in Oujda, to provide work for people. It's not like Tangier, where there is a lot of work for young people, to buy clothes, and a lot of stuff, but not in Oujda.

Both stories refer to the lack of decent working conditions and supportive political environment in the interviewees' regions of origin. This situation made them more determined to migrate to Tangier and think of alternatives to secure their livelihoods. Both respondents had limited social networks in Tangier on which they heavily relied and depended upon for job opportunities. To them, Europe appeared like a promising option that would always be better than staying in Morocco. Amine's and Imane's poor socio-economic conditions and status made it difficult to be certain whether they would be able to realize their dreams, as shown by Imane's interview extract:

> *Imane*: Especially this year, we had a crisis in Oujda
>
> *Interviewer*: A political crisis?
>
> *Imane*: Above all, people don't want to stay in Oujda anymore, everyone there, they do all things possible to return to France or Spain
>
> *Interviewer*: And you would also like to go to Spain or Europe?
>
> *Imane*: Me, I would like to go to Spain.
>
> *Interviewer*: Yes?
>
> *Imane*: Yes, (laughs) I would like that. It's been a while since I married [name] in Spain, but it's a *marriage blanc* [marriage without consumption]. That's why I always said: if possible I would like to go to Spain.
>
> Interviewer: You think it's easier to go since you are already in Tangier?
>
> Imane: Of course! I think like that, for me, if I would work with someone good, who would give all papers and a good salary. That's why I am here, *voilà*! Now, I work at the place of a rich lady, I am very lucky. I thought: '*Why not?*' If there is a small chance, I would like to return to Spain, but I don't know how, that's the problem. It's not even only for me, sometimes I think: '*It's me or my daughter*'. I would do everything so she could go as well and she could continue school, and so she might even become a doctor or a professor.

Although Imane's account shows that she had already undertaken some actions to achieve her dream, namely (temporarily) moving to Tangier, it remained unclear whether she would be able to really migrate to Spain.

To conclude, in Tangier, the social inequalities within Morocco seem to be reflected in the development of cultures of migration, not only across regions/cities/villages, but also across social classes. This finding builds further on insights in social networks research, indicating that social networks within Tangier are also very socially homogeneous (e.g., McPherson et al. 2001). These socially layered networks then shape distinct cultures of migration. The more socially advantaged groups often have more extensive networks and relatives in Europe and can thus already benefit from some kinds of remittances, support, and network in times of hardship. Yet, this group is also more aware of all the disadvantages related to migration, such as experiences of discrimination and 'ghettos', which results in a

critical stance towards migration to Europe. The more socially disadvantaged groups, who often have internally migrated from regions experiencing economic and political insecure or instability, have less access to migrant groups. Therefore, they are less able to put their migration aspirations into practice (due to a lack of financial means and migrant networks), but also have less information that could distort or nuance the positive image they have of migration to Europe. Thus, the ability to migrate as well as the frames of comparison vary across both groups. These differences also contribute to the creation of distinct cultures of migration within Tangier itself.

#### 7.3.1.2 Regional Differences: Tinghir

The result of the longstanding tradition of migrating to Europe since labour migration started after World War II has a clear impact on the existing cultures of migration in the city of Tinghir. Here, you see large quarters of concrete houses next to neighbourhoods of (sometimes desolated) traditional homes made of clay, which are slowly but surely deteriorating – literally falling into pieces. After the first migration flows to Europe that followed the second world war, migrants regularly returned to their families in Tinghir during holidays and started to build concrete houses similar those they had seen in Europe. These houses have a lot of modern advantages but could not always compete with the traditional houses in terms of natural insulation, heating, and cooling. Nowadays, many of the traditional houses are still (partly) in use, especially during the cold winter months as they provide better protection against the cold. This juxtaposition of concrete and traditional houses is very characteristic and demonstrative of migration's impact on Tinghir, and clearly enables to distinguish people with migrant networks from those without. In the city centre, streets are filled with Moroccan tea shops, as well as with returned retired immigrants and people living off the money sent by their relatives. The undeniable impact of migration on the city shapes social life in countless ways. The city breathes migration, and this has univocally led to the creation of an unstoppable culture of migration sustained through continuous chain migration.

This ongoing culture of migration can partly be ascribed to the current socio-economic situation of Tinghir. The city suffers from decreasing agricultural output (and investments) and struggles to offer sufficient (decent) working opportunities to its inhabitants. Hence, given the far-reaching impact of migration on everyday life and the local economy, it is very understandable that migration is still perceived in a positive light by most respondents. Leaving aside whether migration contributed to Tinghir's development over the years, the inhabitants mainly looked at it from a personal perspective or in a positive way, or both. The fact that most migrants approached migration this way is especially related to the assets and resources migration has brought for the respondents' relatives and the increase in employment opportunities for migrants themselves. Hardly any differences were found across respondents with regard to their (positive) image of Europe. Respondents referred to

Europe as a place where people have to work hard, deal with a lot of stress, and where there are still some opportunities to work, especially for young people. Nevertheless, the combined effects of the European economic crisis, changes in European immigration laws, and of the end of organized labour migration in Europe have resulted in fewer opportunities to migrate, regardless of one's family networks or resources. As mentioned by Zahib (female, 33 years old):

> *Zahib*: It's difficult [to go to Europe] and it's also not so difficult. It's possible to go as a tourist, but not when you search for a contract to work there. There are many young people, who go to France to work but who do not find a job... it's the global crisis, it's really not like in the old days, even people in France encountered difficulties due to the crisis, especially in Spain I guess.

Prevailing cultures of migration do not really help to explain differences and changes in environmental migration aspirations, but matter because of the creation of transnational social capital (see also Portes et al. 2002; Eckstein 2010). Given the extent of emigration out of Tinghir, inequalities have developed over generations between those who have and those who do not have access to transnational immigrant networks. However, even in such a major (transnational) emigration area, some households still report not having contacts overseas or linkages with families who do. Views on environmental change in people's immediate living environment differed according to respondents' transnational social capital (see also Portes et al. 2002; Eckstein 2010), which is also a crucial condition for the development of migration aspirations due to environmental change.

Building further on the results shown in the previous two chapters, differences in perceived environmental change in people's immediate living environment are mirrored in structural differences in society, and reflect differences in the living standards, education levels, and professional activities. The latter factors are very visible in everyday life and are crucial to understand emerging patterns in perceived environmental change. They also reflect the resources people receive from their migrant networks. Having transnational immigrant networks provides a type of social capital that matters for the development of environmental migration aspiration for two main reasons: (1) the sharing of knowledge about environmental/climate change discourses in general (e.g. through education or media) and in their living environment (e.g. through education or tacit knowledge and skills) (cf. Chapters 5 and 6); and, (2) the necessity to work in a subsistence economy (due to a lack of alternatives or education) and, hence, the lived experience of environmental change in daily life. Both reasons are partly related to the transnational social capital that seems to structure inhabitants' perceptions of environmental changes in Tinghir and its environs.

In the following sections, I discuss the migration aspirations of these two groups – those with and those without local and transnational social capital – separately and discuss the ways in which these potential aspirations relate to environmental changes. I also set out how transnational social capital results in distinct vulnerabilities towards environmental changes and distinct possibilities and imaginaries with

regards to migration. Social, economic, and educational inequalities were fuelled by the receipt of remittances and consequently enlarged over the years.

### 7.3.2 *Transnational Social Capital Reduces the Need for (Environmental) Migration*

This section mainly applies to respondents living in Tinghir since they face more environmental changes in their immediate living environment and for their work activities. For families with transnational social capital, such capital appeared crucial for the development of environmental migration aspirations in two ways: through remittances that stimulate and make education, entrepreneurship, and investment in associations possible, and through knowledge transfers about environmental change (in terms of teaching and discussing climate change discourses, cf. learning method of environmental change). While the first reason may make environmental migration aspirations seem superfluous, the second could provide the grounds for solidarity with more vulnerable groups in society with regard to environmental change, and thus serve as an incentive to set up an association that could serve as an adaptation strategy to deal with environmental change.

Remittances were mainly destined for the respondents' individual use, generally improving the education level within their families and making them more prone to invest in local businesses (regardless whether these businesses were economically viable or not). It also improved their ability to migrate to larger cities (e.g. Casablanca or Tangier) to look for work. Hence, people receiving such financial remittances opted to move away from working in a subsistence economy. Ironically, this same group is the one with greater access to agricultural fields. As also shown in a study from De Haas (2006), there is a higher percentage of people without land among non-migrant and internal migrant households, compared to international and returned migrant households living in Tinghir. As illustrated by the case of Zahib (female, 33 years old, Tinghir), (higher educated) young people especially no longer wish to engage in this subsistence economy:

> *Zahib*: We do not encounter problems, only in Zagora, where the desert is expanding. Here, in Tinghir, people are left to work in agriculture. A lot of people used to work in the forest but nowadays, only a few do so, people have stopped working in agriculture.
>
> *Interviewer*: How come?
>
> *Zahib*: Because people don't wish to stay here, working in agriculture, they rather go to France, and Europe. Most young people living in Tinghir, migrated to Europe, because here, there are no means to work, there are no factories, there are no places to work. So, everyone has '*the mentality*' to go and migrate, and that's why they have left it [agriculture]. For the older people, life goes on, they are tired, they have grown older. I think that when they will have built the dam, people will return, because now when it rains, the river just mixes everything together, causing a lot of problems afterwards. Because if people work on their fields, and later, the river takes it all. . . . when the dam is constructed, all these problems will cease, as we have a good climate and clay. . . The ground is of good quality, after they have

> built the dam, people will return, in order to set up modern projects, and improve agriculture here. I think that, because people would like to work. But now, the river always causes too many problems when it rains a lot.

According to Zahib, high emigration rates result in changes in land ownership and in the attractiveness of investments in subsistence agriculture. This is not necessarily only due to environmental changes but should be placed in its context of rising standards of living. The combined effects of rising standards of living and cash inflows from remittances often discourage young men to 'get their hands dirty' and work – leaving the 'old' economy behind (see also Kusunose and Rignall 2018) and aspiring to participate in the 'new' economy, without necessarily being able to do so. These societal changes have a variety of consequences, gradually reshaping family life, agricultural work, and food prices. This is for example the case for Muhammed (male, 60 years old, guardian of a classified mosque, Tinghir), who stated that 'everything has changed'. In the early days, he said, parents arranged everything for their children's marriages and even gave a sheep and a clog of silver as dowry to the bride's family. Nowadays, young people are allowed to choose their partner themselves, which is not as easy as it seems, as he explains. As he argues, men do nothing and thus cannot afford to marry anymore. Although his five daughters are all ready to marry, and over 18, none are as they cannot find a man who can afford marriage. He argues that studying could improve the chances of finding a good husband. Others, like Houda (51 years, female, Tinghir), only reported experiencing the impact of environmental changes through the rising prices of vegetables and meat. This group is overall more educated or wealthier or both, which opens the possibilities to work in administration, education, or in local businesses and thus reduces the need to work in agriculture, especially in subsistence farming. Consequently, when this group is confronted with environmental changes within their immediate environment, there is less need for adaptation because of their personal use of remittances to mitigate such shocks.

Although people with transnational social capital are more highly educated and have more theoretical knowledge about climate change discourses or environmental changes from a scientific perspective, these ideas are less easily converted into their own immediate living environment; these people (and youth in particular) are better educated but less aware of the implications of such changes for agriculture. Those with awareness are often informed by their transnational networks and make use of their remittances and networks in a collective way to set up associations. These associations do not aim to counteract the consequences of environmental changes or mitigate them, but rather strive to prevent (environmental) migration. They do so by providing new employment opportunities and modernizing traditional agricultural techniques, circumventing traditional laws and customs in the process. This is for example the case for Younes (male, 40 years old). Younes frequently visited Belgium and had many local contacts (of Belgian background) there. He was the president of an association whose activities aimed at transporting school girls to increase alphabetization; reconstructing and repairing water canals to irrigate the fields; installing solar panels to dig up water and irrigate the immediate surroundings

of a school; providing internships for midwives; and breeding a particular stock of goats that gives more milk. He said that his views on migration had dramatically changed, and that only the poorest wanted to go to Europe, which they perceive as 'heaven' ('*Le paradis*'). He was often attempted to persuade young people to abandon their European dreams and focus on Morocco instead. For instance, he stated that one cannot survive without having a job and that society's focus – including in Morocco – is directed at material goods (such as possessing a car) instead of the collective good. As an alternative, he suggested investing the money sent by relatives from abroad to start an enterprise in Tinghir. Having said that, Yunes regularly goes back to Belgium for several months at a time and only returns periodically to Morocco to continue working for his association. This practice of setting up associations at a grassroots level to compensate for the lack of a well-organised social welfare system in Morocco is very common in the Moroccan context. Policymaking is very strongly developed at the national level but does not include many initiatives oriented at the meso-level. This results in an abundance of small, uncoordinated, grassroots-level initiatives that are sometimes supported by local authorities or associations abroad. It is exactly through this practice of setting of associations that often only involve a couple of persons that migrant networks or transferred knowledge make a difference and could turn migration into a successful adaptation strategy for dealing with environmental changes (cf. Steinbacher 2015; Isaakyan and Triandafyllidou 2017).

### *7.3.3 Increased Vulnerability to Environmental Change, without any Migration Opportunities*

People living in Tinghir without transnational social capital suffer from relative deprivation compared to their neighbours. The lack of such capital is mainly visible through the lack of remittances, thus relatively lower financial resources. Therefore, these families muts compete with businesses that survived on remittances and are not necessarily being financially viable. Furthermore, they have no safety net in case of hardship (as the government does not adequately provide social security and services). For instance, if people need to visit a hospital that offers more than basic services (like the hospital in Tinghir), they need money and time to travel to Marrakech. This unequal distribution of social safety nets is further reinforced by the fact that the lack of transnational social capital frequently coincides with a lack of local immigrant networks (e.g. in larger cities in Morocco). Hence, these families more often lived in 'traditional' (i.e. clay) houses, usually lived in poverty, and displayed lower educational attainment levels. This was, for example, the case with one of the interviewees' sons who did not have any transnational networks: when asked by his father to quit school in order to help to contribute to the family's income, he went to Libya for a year, without knowing that he would be unable to send money back to his family; later he had to flee because of political turmoil

following Muammar Gaddafi's death. Living in a region that has experienced a lot of emigration does not immediately contribute to a general increase in people's living standards, as remittances are mainly used individually. This contrasts with the case of Houda (female, 51 years) who was able to stay with her in-laws in Marrakech when her husband got ill in order to be closer to the hospital.

Due to overall difficulties for survival, and especially to relative deprivation compared to larger groups of people having access to transnational social capital, these families are more likely to depend on agricultural work, which increases their vulnerability to environmental changes. More specifically, women continue their work in the fields; their harvests are not meant to be sold on the market but for their own use or for feeding their animals. An example is Rachid (male, 56 years old, kiosk seller and agricultural president of local NGO, Tinghir). He recognized that only women were still working in the fields as this type of outdated farm work is not sufficient to provide for a family; he did not link this inadequacy to to environmental changes but rather to the organization of local agriculture.

> *Rachid*: Nowadays, it's only for women, because we are obliged to abandon agriculture. We really said that we need a solution for agriculture, because we only have a small parcel, and another one, and you can work on it maybe for a day, two days maximum, but without providing you the essential income to provide for you and your family. It's just not possible, it's impossible. We leave it [agriculture] aside and we plant alfalfa and a couple of things, but it's only to pass the time. It's really insufficient.

This extract demonstrates that environmental changes create the conditions in which migration imaginaries may be developed. Migration may seem like a perfect escape compared to other adaptation strategies since environmental changes are not being dealt with in a structural and updated manner and are linked to particular land use and governance. The linkage with environmental factors is not being made here, but occasionally arises when discussing agricultural decline. This extract illustrates that it is mainly people who lack other means who continue to put effort in agriculture.

While large groups of people (mainly men) leave agriculture as their main profession, poor people living in the surroundings of Tinghir (including nomads) migrate locally towards Tinghir to borrow land and work on the field, which is illustrative of the survival difficulties of people living in surrounding areas. Therefore, when people tend to leave their fields in order to take the easiest and safest way out, there remains a group of people living in poverty and who still rely on agriculture or who would see agricultural work as an improvement of their situation. This is illustrated by the story of Rehana (female, 46 years old, interviewed through a male interpreter), who grew up in the Tinghir area and who, before marrying, contributed to the family income by collecting wood in the mountains for heat and cooking. Now that she is married, she wishes to own some agricultural parcels or cattle or both, in order to contribute as well to the household income:

> *Interpreter*: She would love to go to the field, she adores it, but she does not have money because her husband is poor. He doesn't have fields, he doesn't have animals. If she would have had animals and fields, she would have gone for sure. If there would be someone who would buy a cow, she would ask –even if she doesn't have the space to keep the cow – she

would ask whether she could take care of it. But as she doesn't have any means, she stays at home.

*Interviewer*: Why would she like to do that?

*Interpreter*: She said that, for them, like I said earlier, animals and fields, are ways to animate the households' income, as her idea is to help her husband. She knows very well he is poor, and she wants to help her husband. If her husband were rich, she wouldn't bother and she would only focus on the air-conditioner, painting the house, etc.

The complex interlinkage of environmental, gender, social, cultural, economic, and legal factors creates vulnerability towards environmental change, without necessarily giving rise to well-developed migration aspirations. Given the poor living conditions, migration is not considered a valid option for those who suffered the most from environmental change – namely elder women – and are rather passed on to their children, as was also the case for Chaima (female 55 years old, Tinghir), who was interviewed, accompanied by a male interpreter:

*Interviewer*: Would she like to move to Europe?

*Interpreter*: Non, this family, non, nobody. Everyone works here, they work on their ground here. They work on the fields, or they work in construction. They all have their reasons for this, they cannot leave Tinghir, they have to stay here in Tinghir.

*Interviewer*: But, would she like to move, alone or together with her family to Europe?

*Interpreter*: I don't think it's possible, wait, I will tell her (they talk and laugh very hard). That's a good one! She says that she would like to leave and migrate to Europe under the condition that you take care of her children. She said that you have to watch her kids (laughing). You should stay at her place and then she takes your place (laughing).

*Interviewer*: Would she like her children to migrate?

*Interpreter*: She said yes! She said that if her son finds a place to work in Europe, she agrees! What can he do here?

Hence, the most vulnerable group to environmental change would consist of those working in agriculture, lacking financial resources, and who have reached a certain age, which makes it impossible to even imagine migrating as an option. This group could be seen as a 'trapped' or 'immobile' population' (Zickgraf 2018). And more in particular, this form of immobility can be described as 'acquiescent immobility', referring to those who do not wish to migrate and are unable to do so (Schewel 2019). As their children decide to not contribute to the work in the fields and migrate due to the lack of employment opportunities, it is hard for them to make the connection between their migration aspirations and environmental changes. This means that hardly anyone develops migration aspirations and links these aspirations to environmental change. This is especially visible when looking at the interviews with younger respondents. Similar responses were given, all referring to '*what they can do here: nothing*', like Zohra (female, 24 years old):

*Interviewer*: Last time you already told me you would like to go to America.

*Zohra*: Yes, that's my dream, I wish to get there one day, I want to live better than now, I want to get a job, and then live how I want, to have my house, to do what I want, here it is difficult to do what I am seeing.

*Interviewer*: What do you mean with: it is difficult to do what you want to do?

*Zohra*: It is difficult to get a job, a good job I mean, it's like...here, girls don't get jobs, it's a little bit bad, I can see. That's why.

*Interviewer*: What would be a good job for you?

*Zohra*: I don't know yet, because I don't know what jobs there are in America, but I can do any job!

The lack of employment opportunities as a reason to migrate is widely shared across all groups:

*Nayla* (female, 45 years old): There are many people here that migrate towards Europe and also in Morocco, because there aren't that many employment opportunities. There are no factories, no enterprises, there is nothing, even if you want to invest money in larger projects, you are not able to do that here. You are almost obliged to move to bigger cities.

*Interviewer*: Why not?

*Nayla*: Because there isn't a big infrastructure. People cannot afford to buy things, you cannot do a lot of things here. It really depends on their capacities.

The results of this study force scholars to reconsider vulnerabilities to environmental change and include an intergenerational element. This is particularly true in regions where environmental changes gradually change over generations. As a consequence, environmental migration can hardly be observed at the micro-level, for example measured through migration aspirations or actual migration, but is a concept that seems to be only linked at the meso- or macro-level.

## 7.4 Conclusions

Findings from this chapter demonstrate that by examining environmental migration aspirations, existing shared conceptions on how environmental change could be linked to migration are challenged. Insights and concepts from migration theories, such as the migration systems theory (i.e., 'cumulative causation', Myrdal 1957; and 'culture of migration', Timmerman et al. 2014) as well as disaster studies (Faas 2016), help to understand how people's vulnerabilities and resilience to environmental changes in combination with differentiated abilities to migrate result in or hamper the development of – sometimes intergenerational – migration aspirations. This study demonstrates empirically how perceived environmental changes, agricultural practices, socio-economic developments, and cultures of migration are relevant for understanding the adaptation strategies that people affected by gradual degradation of the environment use or aspire to use (see also Schilling et al. 2012). We summarize the findings of this study briefly.

First, this chapter shows that the history and patterns of migration from Morocco have led to the creation of three different cultures of migration: two within Tangier and one that in general prevails in Tinghir. More socially advantaged groups (both in Tangier and Tinghir) are often part of a culture of migration in which information obtained through transnational networks have resulted in less urgent or expressed migration aspirations. Through dynamics of negative cumulative causation (cf. Myrdal 1957), these people – who occupy a relatively good position in Moroccan society – have received ample negative feedback, which undermines their motivation to migrate and makes them cherish their life in Morocco even more. Those who are less socially advantaged are less well-informed about life in Europe and mainly see more advantages related to migration, perceiving the outcomes of migration positively. They see the impact of financial remittances sent back to relatives, which is for instance clearly visible in the construction of houses. Additionally, they also more easily note the opportunities to find jobs, receive support to enrol in education, or search potential marriage candidates abroad. This divide takes different shapes in Tinghir and Tangier, and can partly explain regional differences found with regards to cultures of migration. This is understandable since these settings differ with regard to social inequalities, visibility of the impact of transnational migrant networks, job and educational opportunities, and migration dynamics. As a consequence, social remittances such as knowledge transfer concerning scientific climate change discourses, ideas on the development of adaptation strategies, and financial or material support for local associations in Morocco and creating work opportunities, are being sent and shared in these local communities in Morocco. These social remittances can contribute to solidarity within the local community or within social networks within the same municipality (Levitt 1998). Finally, these distinct cultures of migration, impacting social structures in Moroccan society to a high extent, actively shape migration aspirations and the ability to realise these aspirations. For example, when looking at the importance of the culture of migration in Tinghir (De Haas 2006; Carling and Hoelscher 2013; Gemenne and Blocher 2016; Obokata and Veronis 2018), migration is still regarded in a positive way for most inhabitants, however, not all of them are able to translate this positive view into actual migration aspirations. This brings us to the another main conclusion of this chapter.

Second, findings indicate the creation of parallel groups that differ with regard to environmental migration aspirations and vulnerabilities and resilience towards environmental change. These social inequalities are created and reinforced due to differences in transnational social capital (Portes et al. 2002; Eckstein 2010). As some initiatives are organized to prevent young people from migrating by offering improved and valid opportunities in agriculture in Tinghir, migration aspirations themselves are hardly linked to environmental changes at the individual level. The connection between environmental change and migration appears to have been lost across generations. This is particularly true for those without transnational social capital as they are more vulnerable to environmental changes, due to the lack of remittances and an increased focus on agricultural activities as a way to complement the family income. Understanding the situation of these families – where it is

predominantly women who are confronted with environmental change as men search for alternative employment opportunities – could give a more nuanced substance to the definition of 'trapped populations' (Zickgraf 2018). Hence, the most vulnerable group affected by environmental change – elder women – does not even dare to put their dreams into actual aspirations or practice. Instead, they wish their children would migrate for better employment opportunities and hence, diversify household incomes and spread risks (cf. new economics of labour migration). As the next generation is not even familiar with environmental change, they also do not connect their migration aspirations to changes in their natural environment, but rather refer in general to the genuine lack of all kinds of opportunities. Thus, in line with Crawford (2008), migration aspirations are not necessarily turned into migration decisions, which should be understood within the socio-economic context and the social organizations of the households in which people live. These findings urge scholars to rethink the existing categories of ideas concerning environmental migration and transcend the individual level. In line with the new economics of labour migration, migration should be seen as a project of households. Hence, when searching for ways to better protect people affected by gradual degradation of their natural environment and streamline environmental migration, scholars and policymakers should focus on entire households or extended families instead of merely looking at individuals. In this sense, the resilience and vulnerabilities of the elderly with regard to environmental change should be inquired about in future research and considered together with the surrounding employment opportunities, cultures of migration, existing infrastructure, and land sharing practices.

To conclude, this chapter's findings are innovative as they challenge existing notions of being 'trapped' or immobile (TGOFS 2011) and, consequently, categorizations of environmental migrants (Bates 2002). Furthermore, this study sheds a new light on prevailing theories on environmental migration as it introduces insights from new economics of labour migration and migrant systems theory. This study shows that in order to understand people's migration aspirations, a distinction needs to be made among and within communities between those who have transnational social capital and those who do not (Portes et al. 2002; Eckstein 2010), and even within families, between males and females, young and elderly. Gender appears to play a crucial role in the extent to which people build resilience towards the adverse effects of environmental change. If entire households are affected equally by environmental change, they would more consciously develop household adaptation strategies and spread risks. However, the gendered division of tasks – which may be inspired or shaped by reduced agricultural revenue over time as well – have led to inequalities within the household. In relatively poorer families, and for those working in agriculture, the share of women's contributions in the household incomes decreases over time due to environmental degradation. As a consequence, the status of the women in the family decreases as their dependence on the other household members increases. As the entire household may receive less income due to these changes, the need for migration is especially noted when it concerns the jobs and income of the men in the household and to a lesser extent those of women. Rather, this has translated in the development of intergenerational migration aspirations, of

mothers wishing their sons would have better opportunities. As noted above, this gender divide and adverse impact of environmental change on gender inequalities is mainly noticeable within lower socioeconomic households, such as those who still need to rely on subsistence economy in agriculture to secure their income. These findings are in line with previous research that found that the consequences of environmental changes are harder felt by people living in particular areas and varies according to social class and gender (TGOFS 2011; Warner et al. 2012) as this means that people experience these changes differently and have distinct vulnerabilities and coping capacities. Finally, as shown by this chapter, it becomes clear that most of these migration aspirations are linked to and understood in terms of employment opportunities.

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# Chapter 8
# Connecting Environmental Changes, Migration Causality, and Transnational Practices. Insights from the Moroccan Diaspora in Belgium


In this chapter we turn to relevant findings arising from fieldwork conducted in Belgium in the context of the MIGRADAPT project. Although the Moroccan case study that forms the core of this book must be interpreted independently from the empirical data provided in this chapter (and vice versa), both case studies hinge on the same theoretical framework and are, as such, inherently complementary and connected, although not meant to be directly comparative.

As set out in Chap. 4, the MIGRADAPT project seeks to explore how perceptions of environmental changes can impact the migration aspirations, trajectories, and realities of selected diaspora communities living in Belgium (specifically Moroccan, Senegalese, and Congolese migrants) and to appraise the conditions under which migrants may, in turn, contribute to supporting the adaptation and resilience of their communities of origin (cf. Chap. 4). This chapter adds value to the empirical evidence contained in previous chapters by presenting the ancillary perspective of Moroccan migrants living in Belgium regarding matters that form the red thread of this book, namely: (perceived) environmental changes, migration aspirations, adaptation strategies, and cultures of migration. In doing so, we further flesh out the similarities and distinctions that can be made between mobile and immobile Moroccan populations, contributing to a better understanding of transnational practices in the context of environmental change.

Most empirical studies conclude that migration resulting at least in part from environmental changes will remain within the borders of that country, i.e., internal migration. We take a different approach by interviewing international migrants from Morocco in Belgium. Although studies exist to examine migration between Morocco and Europe (Collyer 2007; Berriane et al. 2015) – including between Morocco and Belgium (Bousetta and Martiniello 2003; Ouali 2004; Martiniello and Rea 2013; Zickgraf 2014; Timmerman et al. 2017) – only a few used a transnational approach focusing on communities of origin and members of the diaspora, and none of them specifically investigate the potential interactions between environmental factors and migration journeys to Belgium or the impact of environmental perceptions on transnational practices between Belgium and Morocco.



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In doing so, one of this chapter's main objectives is to interrogate the environment-migration nexus through a perspective that reconciles the study of migration drivers with that of migration impacts. Today, scholars, policymakers, development practitioners, and the general public recognise that the impacts of disasters, climate change, and other environmental disruptions are shaping human mobility (TGOFS 2011; Kumari Rigaud et al. 2018) and immobility (Black and Collyer 2014; Zickgraf 2018; Ayeb-Karlsson et al. 2018). While acknowledging multi-causality as inherent to any migration decision, environmental disruptions are increasingly identified and presented as primary migration and displacement drivers. For example, 74.5% of new internal displacements that occurred in 2019 were triggered by disasters (mainly weather-related) rather than by conflict and violence (IDMC 2020). While sudden events like flooding are forcing people from their homes, slow-onset changes induced by climate change are also moulding human migration patterns and dynamics. Sea-level rise, soil salinization, coastal erosion, drought, and climatic variability are affecting the physical inhabitability of affected communities while also making it harder to sustain local livelihoods, especially when those livelihoods are natural-resource dependent. As livelihoods degrade, many people are on the move in search of better opportunities.

Identifying the role of environmental and climatic changes in driving human mobility (migration, displacement, immobility) is essential to progressing scientifically and in the design and implementation of effective policies treating the environment-migration nexus. However, addressing the issue of *causality* alone does not adequately capture the many links between climate change (and other environmental changes) and human mobility. A less studied, but equally important, task is to understand the outcomes and the *impacts* of human mobility. The relationship between environment and migration does not end with the out-migration of an individual or household: migration can impact environmental change in a variety of ways. Migration can affect environmental conditions in the host area, through increased pressure on natural resources, for example. Migration also affects the community of origin via the (potential) reduced pressure on natural resources, as well as with financial and social remittances that can increase the adaptive capacity of households and communities.

These two foci of study, causality and impacts of migration, for the most part have been treated separately from one another. In this contribution, we bridge the fields by addressing how causality of migration affects the subsequent impacts of migration in communities of origin. Importantly, we acknowledge that any form or motivation of migration (even if environmental factors are not a stated primary driver) can impact communities of origin under environmental duress, and so, in addition to analysing the role of environment in shaping the migration journeys of participants, we analyse how perceptions of environmental changes[1] in the community of origin translate into transnational practices. We then assess how transnational practices affect environmental resilience in communities of origin.

[1]We refer here to 'environmental changes' as a broad category that encompasses climate change.

This chapter starts by reviewing the literature on environmental changes and migration, primarily focusing on how migration acts as a potential adaptation strategy, rather than the failure to adapt. It then delves into empirical findings in three aspects: migrants' perceptions of environmental changes in Morocco, their motivations for migration, and their ensuing transnational practices between Belgium and Morocco. Finally, it analyses how these three aspects link to impact the environmental resilience of communities of origin.

## 8.1 Emergence of the Migration-as-Adaptation Discourse

Although some early studies tackled the impact of migration on environmental conditions in areas of destination, e.g., refugee camps in Somalia (Young 1985), to date the vast majority of scholarship on the environment-migration nexus focuses on issues of causality. This holds particularly true for academic and grey literature studies of climate change and how it drives out-migration from affected areas. Indeed, how climate change drives (or will drive) migration and displacement forms the heart of public and political discussions on climate change, with migrants becoming the 'human face' of global warming (Gemenne 2011). In the early stages of attention to these issues, migration was portrayed rather negatively as an international humanitarian and security threat should climate action fail to take place, resulting in terms such as 'climate refugees'.

However, already in the early 1990s, migration scholars refuted these largely negative, and simplistic, depictions. This well-documented divide eventually produced an alternate body of work based mostly on empirical, qualitative case studies (Suhrke 1993; Morrissey 2012; Gemenne 2018). Evidence suggests two main findings: first, human mobility linked to environmental change (including but not exclusive to climate change impacts) is primarily internal, and second, mobility is multi-causal. The former point challenges public and civil society discourses in the Global North that expect mass 'waves' of 'climate refugees' to arrive in places like Europe. The latter demonstrates that attributing migration singularly to climate change – and, for that matter, isolating any one driver of migration – ignores the complexity of migration in that it results from a combination of social, political, economic, environmental, and demographic factors (TGOFS 2011; Piguet and Lackzo 2014; McLeman and Gemenne 2018). Moreover, climate change acts as a threat multiplier, potentially influencing all these drivers. Outside of situations of direct sudden-onset disaster displacement, in fact, people are more likely to cite the impacts of environmental changes (poverty, decreased agricultural productivity, rising food insecurity, etc.) as motivating their migrations rather than explicitly citing the changes themselves (Suhrke 1993; Hugo 1996; Nguyen and Wodon 2014; Kumari Rigaud et al. 2018). Migration decisions can also be derived from more individual characteristics and socio-demographic variables such as one's education level, type of activity, gender, and age (Henry et al. 2003, 2004; Van der Land and Hummel 2013).

One of the most significant outcomes of this empirical pushback is the *migration-as-adaptation discourse*. Although it largely emerged in the past decade, it builds on various bodies of work in environmental community research, development studies, and 'mainstream' migration scholarship, including the Sustainable Livelihoods Approach (Brocklesby and Fisher 2003) and the new economics of labour migration (Stark and Bloom 1985; Stark 2005; Taylor 1999; cf. Chap. 2). Migration is seen as one strategy – among others – to secure or diversify or both the livelihoods of a given individual, household, or community, especially in those that are heavily reliant upon natural resources (Kniveton et al. 2008; Gemenne 2010). This refuted any universal categorization of human mobility caused (in part) by climate and other environmental changes as a last resort. Additionally, it highlighted not just the choice to leave, but also the potential benefits of migration for the migrants themselves, the community of origin, and the communities of transit and destination (Gemenne and Blocher 2017). Migration can, under the right conditions, improve migrants' physical and environmental security as well as their socio-economic conditions (through improved access to jobs and a better income, for instance), as well as those of their households and communities of origin, and contribute to the economies and social fabric of destination areas. Migrants' contributions to societies of origin and destination cannot, however, be reduced to their economic value.

Within this more impact-focused element of migration-as-adaptation, empirical work mainly targets the effects of migration on households and communities of origin. Internal and international migrants may contribute to varying extents to greater resilience and adaptive capacity via social and financial remittances. Social remittances through the transfer of beliefs, values, knowledge, and skills gained through migration can bolster in situ adaptation efforts, for example, providing new or updated technological expertise in agriculture (Levitt 1998; Scheffran et al. 2012). Social remittances, however, are seldom empirically targeted: the vast majority of theoretical and empirical literature focuses on financial remittances as they may support the resilience of households and communities of origin. With money and gifts in-kind provided by migrants, households may reduce poverty levels, be able to decrease their dependence on natural resource-based livelihoods, diversify their livelihood strategies, build more disaster-resilient homes, and invest in new technologies such as irrigation systems, and so on (Ionesco et al. 2017). For instance, remittances can be used by agricultural households to overcome the loss of income that may arise from drought and subsequent crop failure (Massey et al. 1993). At the meso-level, diaspora members (internal and international) may invest in development projects, infrastructure or disaster risk reduction, or create spill-over effects through household remittances' stimulation of the local economy.

However, these beneficial outcomes are far from universal or inexorable. In many ways, therefore, the migration-as-adaptation discourse puts an environmental 'twist' on the long-held migration and development debate regarding the impacts of transnational practices (De Haas 2007). The extent to which these remittances are beneficial beyond the household-level or family network, for example, remains unclear. Even at the household-level, social and financial remittances, or any transnational or translocal practice for that matter, do not always occur. As they are most

classically motivated by family responsibilities, a lack of close relatives or fraught relations can diminish or altogether cease transnational practices (Zickgraf 2014). Additionally, migration often entails important socio-economic costs for both migrant and non-migrant populations in the short and long term, depending on a set of preconditions at the micro-, meso-, and macro-levels, such as the policy environment and population dynamics as well as pre-existing structural vulnerabilities. Migrants' individual circumstances and situations in their transit or destination country affect their ability to take part in transnational activities (e.g., remittances, solidarity projects, visits to their home country) and, ultimately, to contribute to boosting the socio-economic and environmental resilience of their household or community of origin (Adger et al. 2018; Scheffran et al. 2012).

## *8.1.1 Results*

### 8.1.1.1 Perceptions of Environmental Changes in Morocco

In order to understand the impacts of environmental changes in Morocco and the respondents' communities of origin on both their own migration motivations and their subsequent transnational practices, this section examines firstly respondents' perceptions of changes and hazards, such as drought. Perceptions of environmental changes, including climate change, at both the individual and community level, vary greatly according to a range of socio-demographic and cultural characteristics, including one's educational attainment, age, belief system, or direct experience with such changes and how they may or may not impact their livelihoods (Henry et al. 2003, 2004; Van der Land and Hummel 2013; cf. Chap. 5). Both objective and subjective elements shape how environmental disruptions are perceived and described by individuals and communities. Recent research has shown that although the *subjective* perceptions of environmental changes do not necessarily align with *objective* meteorological data, they are key determinants of the migration decision-making process (De Longueville et al. 2020). Furthermore, one's propensity to act towards reducing climate and disaster risk as well as to adapt to both ongoing and future changes may derive from their perception of environmental changes and risks and, in some cases, from biases that tend to normalize these phenomena or recognize them as external forces beyond one's control, e.g., acts of God (Schmuck 2000; Holmgaard 2019; Gianisa and Le De 2018).

Despite Morocco's ranking as second-best performing country in the 2019 Climate Change Performance Index (CCPI) globally, and its first position within the African continent and the Middle East and North Africa (MENA) region (Germanwatch 2018), according to a recent study, 39% of Moroccans had never heard of climate change (Afrobarometer 2019). The composition of our sample, predominantly educated, employed Moroccan migrants coming from the broad middle-class and non-agricultural backgrounds, appears to be in line with the findings of this study: respondents with higher educational attainment (particularly

those with tertiary education) exhibited more awareness particularly around the impacts of climate change. For example, Amina (27) and Cherifa (26), two Master students from Tetouan, became aware of climate change issues at school in Morocco.

Demonstrating the importance of livelihood as well, Saida (30, Sidi Slimane), who was concluding her PhD studies at the time of the interview and working as a freelance journalist, reported having been directly involved in raising awareness about environmental changes (after having left Morocco) through writing articles on water shortages affecting rural Morocco. However, not all respondents had been educated on environmental issues before their departure. For example, Rachida (39, Tangier) explained having only heard of the notion of 'climate change' once she arrived in Belgium.

The interviewed Moroccan migrants living in Belgium were all aware of environmental change in Morocco, either prior to their migration or after arrival in Belgium. Nonetheless, the sample demonstrated varying perceptions of environmental changes and stress. The primary environmental hazard cited was erratic precipitation, although this varied according to region of origin, where flooding, deforestation, and pollution were also reported. These disruptions were generally perceived to have significant impacts on rural and poor households, confirming previous findings according to which environmental changes are especially felt by people working in the agricultural sector (particularly subsistence farming) and who depend on the natural environment to secure their livelihoods (Ellis 2003; Wodon et al. 2014). Indeed, in natural resource-based economies (e.g., smallholder farming, fishing, breeding), livelihoods rely on practices and conditions that are highly dependent upon climate variability (e.g., rain-based irrigation, cattle grazing, availability of fish stocks). In case of weather-related disasters (e.g., drought), the income of farmers and fishers – and similarly, the livelihood of their communities and of their end consumers – are therefore directly and negatively impacted. For the majority of our sample, consisting of urban non-agricultural households, the effects were primarily felt through food prices rather than direct impacts on their livelihoods. In particular, decreased rainfall was perceived to negatively impact the average Moroccan consumer:

> *Samir* (53, Tangier): Up to this day, Moroccans still buy fruits or vegetables directly, locally [produced], even though supermarkets are opening. Therefore, they feel it directly in their wallets. When it rains, they are extremely happy of course, because they tell themselves: There you go, food is going to be affordable! For them, when it rains, that means there is nice weather!

In addition to the direct economic impacts of decreased rainfall and crop failures on the purchasing power of Moroccan consumers, other associated impacts included diseases and water shortages (impacting drinking water). Rainfall (or the lack thereof) was therefore often used to illustrate environmental changes, being a tangible and visible phenomenon that was presented as being central to Moroccans' daily lives. For instance, Marouane (49, Larache) stressed that people must visualize and live these changes to understand them.

Environmental changes materialize through objective and observable elements, such as changing precipitation patterns. Furthermore, previous research has shown that environmental factors are mainly perceived to influence people's lives and livelihoods through associated social and economic impacts (Moyo et al. 2012; TGOFS 2011; Borderon et al. 2018), such as food insecurity, inflation of commodity prices, or declining rural wages. Assessing the human dimensions of environmental changes therefore requires acknowledging the propensity of such changes to interact with a multiplicity of sectors and policies that communities and policymakers would not instinctively link to human mobility, but rather to wider issues of poverty reduction or sustainable development.

Although most respondents were aware of environmental issues and impacts, the majority and their families had not been directly affected by these disruptions prior to their migration outside of the stated impacts on food prices. Three exceptions include Rachida, Cherifa, and Nabil, all of whom had been affected by water shortages in Tangier, Tetouan and Berkane respectively. Rachida (39, Tangier) experienced drought-related water cuts before arriving in Belgium in 2002, and Cherifa (26, Tetouan), recalled water shortages that impacted both agricultural activities and the supply of drinking water in Tetouan, especially in 2016; during one month, she and her family had to fill water containers at set hours. Nabil (50), originally from Berkane (an important farming region in Morocco), reflected on how drought periods had affected his house-painting business, explaining how his wealthy clients – usually large-scale farmers or land owners – were less inclined to hire in such periods as they were incurring economic losses. Explaining that the wheels of the economy would *stop spinning* during times of drought, he recalled a particularly severe drought event in the late 1980s. Although he was one of the few to be directly affected by rainfall shortages, he did not feel that these problems still posed a challenge in Berkane.

In fact, several respondents, including Nabil (50, Berkane), saw such drought-related impacts as a thing of the past, owing primarily to state-led efforts towards ensuring the sustainability of the agricultural sector – such as the *Plan Maroc Vert* (Green Morocco Plan, cf. Chap. 3). Launched in April 2008 by King Mohamed VI, the Green Morocco Plan officially seeks to develop and modernize the agricultural sector through private investments, but also to tackle food insecurity and promote more inclusive agricultural systems (Ministry of Agriculture, Sea Fishing, Rural Development, Water and Forests 2014):

> *Nabil*: Now, through the Green Morocco Plan, the government has introduced many provisions, invested a lot of money, and is doing a lot to help farmers. For instance, if you want to buy a tractor, the State will subsidize up to 60 per cent of the purchase. In fact, we pay it over 3 or 4 years. You want to dig a well, it's the same thing. You want to install a drip irrigation system. . . the State intervenes.

In fact, other respondents, such as Latif (52, Tangier), similarly implied that environmental issues in Morocco had largely been solved via government intervention:

*Latif*: Back home, it's fine, it's green everywhere, you see ... flowers everywhere, you see? Morocco is humid. And thanks to Hassan II [King of Morocco from 1961 to 1999], he put a lot of dams [Sic].

As shown by these examples, positive perceptions about the environment can be linked to a naturally favourable climate, but also thanks to man-made, public efforts such as construction of infrastructure that aims to better manage natural resources. Farouk (51, Tangier) also felt that technological innovations and increased means had contributed to improving the current agricultural situation, citing political issues and unemployment as the two main issues currently facing the country:

*Farouk*: Nowadays, we don't talk about it [drought-related problems], now that the majority of people are digging wells, technology has evolved, people are living relatively better ... There was a time when it wasn't the case you know ... Now, there are dams, big cities. Tangier is a very big city. They have opened harbours ... Morocco has evolved a lot, in terms of infrastructure ... There's everything you need.

Respondents with prior internal migration experience (n = 8) compared environmental contexts and state-led interventions across cities with mixed results, underlining the importance of local-level environmental perceptions (cf. Chap. 5). For instance, Hamid (42, Tinghir), who had lived in Tinghir, Tetouan, Tangier, and Agadir, was quite positive about efforts undertaken by the government in Tangier (where he had lived until 2007), suggesting that the city's cleanliness and respect for its natural environment – which he contrasted with Casablanca, Tetouan and Agadir – could be explained by the government's desire to preserve the city's position as a prime gateway to Europe:

*Hamid*: Back home honestly, in terms of the environment, Morocco was really conscious about this issue. The State, especially, gives a lot of importance to the environment, the forests surrounding Tangier have always been preserved. I have never seen someone cutting trees, there's incredible control over there. I don't know if that's [because] Tangier is closer to Europe and that it's the door to Morocco, that the State has been really controlling the region and keeping it 100 per cent natural ... In Tangier, there are no slums, it's very rare. In Casablanca, there are big slums and for the environment, for the quality of life, it's hell!

In addition, some respondents drew attention to the consequences of certain populations being isolated from the public eye and their ensuing limited capacity to cope with disasters. For instance, Cherifa (26, Tetouan) was aware of the adverse impacts of excess rainfall in different parts of the country, pointing to the differentiated capacities of authorities and populations to cope with disaster risk depending on the remoteness of a given city and of the visibility of a flood event. Furthermore, Samir (53, Tangier), drew a connection between drought, water scarcity, and social unrest by recalling riots that broke out in Al Hoceima (at the northern edge of the Rif mountains) in 2016 following the death of a fishmonger whose merchandise had been confiscated by the police. The social unrest which ensued and came to be known as *Hirak Rif*, or the Rif Movement, took place in a context where reduced rainfall and low crop yields resulted in mounting inflation. According to Samir, this could be further explained by the fact that locals had been facing recurrent water cuts which, despite being aimed at reducing water consumption and avoiding shortages,

were in reality organized in an unfair way by local authorities. As a result, access to water became an object of social mobilization. These observations are consistent with the Rif region's long tradition of social unrest (Wolf 2018).

While some respondents applauded local and state-led interventions in certain cities, many noted the persistent need for greater awareness-raising amongst the Moroccan civilian population. Marouane (49), who worked as a teacher in Larache (approximately 100 kms south of Tangier) and who currently works as a social worker in Belgium, explained the general population's lack of concern for environmental issues by a lack of investment in human capital. He also alluded to the corruption of political elites, whom he accused of over-exploiting natural resources in an unregulated and globalized economic context and of not prioritizing the environment, observing the following:

> *Marouane*: We don't focus on citizens' awareness in order for them to take care of the environment. That's the problem. Morocco's problem is not simply linked [to] global warming in general, it is also linked to the behaviour of citizens themselves, of societies, companies, and of the State, who doesn't do anything about it . . . The media doesn't talk about it much, schools don't talk about it much. It's true that every summer, we organise awareness campaigns to keep the beaches clean and everything, but those remain limited actions.

Samir (53, Tangier) had similar views on the need to educate people, giving the example of plastic pollution, which he called a *calamity* and reflected on his youth when beaches were much cleaner:

> *Samir*: A problem that also becomes clear when you go to the shops, for instance, which is a reflex many merchants have, is that you buy a pack of sugar, they put it in a plastic bag. You buy matches, they put them in a plastic bag . . . It's systematic. People should re-educate themselves about this. But people are not disciplined. And . . . there was no real awareness.

Samir further explained that the state had started taking measures a few years back to address plastic pollution in order to protect the tourism industry as well as to promote changes in behaviour with regards to plastic use and water waste.

Perceptions of environmental changes in Morocco, including climate change, varied greatly within our sample. Although some respondents were confident that environmental issues like erratic rainfall had been resolved by the Moroccan state, others noted the considerable differences from one city or rural area to another, citing the variation between environmental hazards (floods, drought, deforestation), livelihood dependence, government responses, and behaviours of local populations.

#### 8.1.1.2 Environmental Changes and the Migration Decision

As demonstrated in this first section, Moroccan migrants from our sample demonstrated significant, if heterogeneous, awareness of environmental disruptions affecting their home country and of their associated socio-economic and political impacts. Yet, migrants' appreciation of environmental changes (including of their causes,

consequences, and potential solutions) in their home country does not automatically mean that these changes affected their own migration journey. This section, therefore, explores respondents' migration motivations, highlighting the different factors that have played a role in their migration aspirations and decisions. It investigates if, and how, environmental factors have impacted them (or their household of origin) to assess whether environmental changes can be considered a catalyst of migration for our respondents.

While our sample was generally aware of environmental changes affecting their areas of origin and Morocco in general, none of the respondents, in fact, identified adverse weather shocks or gradual changes as a major reason for their own migration. However, in line with previous research (Nguyen and Wodon 2014; Wodon et al. 2014), respondents acknowledged that insufficient agricultural revenue (linked to drought and other weather shocks) may affect the livelihoods of agriculture-dependent households and lead to – mainly internal – migration patterns. This categorisation of environmental-related migration was often perceived to be a relatively new phenomenon, which contrasts with previous labour migration trends:

> *Farid* (60, Tangier): I think that it's only now, it's only been a few years since we've started talking about people leaving their country because of droughts or other climatic problems or other issues such as politics ... I had never heard of this before.

Middle and upper-middle class urban respondents cited the rural plights of the poor, especially those depending on natural-resource livelihoods, whose vulnerability led to internal and international migration. These testimonies stressed the underlying inequalities between households that are socio-economically advantaged and those with fewer resources and connections and which can contribute to shaping migration aspirations (cf. Chap. 6). One participant cited the risks incurred by populations in particularly dry and poor mountainous regions such as in Azilal (in the Mid-Atlas mountains), recognizing that neglected inhabitants were the most likely to cross the Mediterranean: 'That's when people take risks and cross the sea to go to Europe, actually' (Nabil, 50, Berkane). This observation is confirmed in a study showing that Moroccan households from the Tadla Azilal region were the second most likely to have one household member who had migrated to Europe (19% of households) after those from the Oriental (Eastern) region (23%) in 2009/2010 (OECD 2017).

Farida (46, Tangier) recalled similar issues in the mountains of Irfan, where she worked as a teacher and where nomadic populations were facing hardship due to the lack of firewood in winter. As the government had banned cutting trees for timber, locals would do so at night, illegally rather than buy the wood sold by the state, stressing the fact that destitution, adding on to the corruption of local authorities, may further reduce the environmental resilience of the most remote and vulnerable populations. Farida explained that some would migrate to small towns nearby such as Ifran, Azru, Imouzzer Kandar or larger cities such as Fez or Meknes, but that rural-rural immigration was favoured by these populations because it was more affordable. This further supports the idea according to which mobility in the context of environmental change is likely to apply to shorter distances, owing to the

importance of capital necessary to migrate long distances and internationally (Piguet and Lackzo 2014; Van Praag and Timmerman 2019).

Kamel (40), recalled water shortages related to harmful irrigation practices in his hometown of Kaa Asrass, where water from rivers was captured by cannabis plantations in nearby villages. This would eventually cause the rivers to dry up and, in turn, force non-cannabis farmers to rely on unpredictable rainfall to irrigate their fields. He further linked the culture of cannabis to rural-urban migration, with cannabis farmers and salesmen moving to the city and living ostentatious lifestyles, while the state turned a blind eye. Saida (30, Sidi Slimane), who identified as upper middle class, was well-aware of the contrasting vulnerability of poorer populations, mentioning high flood risks in the nearby river of Sidi Slimane suburbs, where small villages were affected by recurring floods. She gave the example of Zagora, in south-eastern Morocco, where local populations had staged a protest against the authorities due to shortages of drinking water: 'For these people, it's absolutely normal: there's no water, therefore they will migrate' (Saida, 30, Sidi Slimane).

In its second national communication to the United Nations Framework Convention on Climate Change (UNFCCC), the Moroccan government explicitly drew a link between increasing rural-urban migration between Central Morocco to the Atlantic coast and drought periods which are increasing in intensity and frequency (Government of Morocco 2010). This was confirmed by Farouk (51, Tangier), according to whom the interlinkages between drought, agriculture and both internal and international migration (particularly in the Rif region) were also clear. Regarding the internal movement of his family from rural Morocco to Tangier (prior to his birth and his move to Belgium at a very young age), and based on insights from older people, he comments: 'Back there, there was drought and farming was made impossible ... And it wasn't just my father. a large part of the Rif's population immigrated to cities, and others went further away, leaving to Europe' (Farouk, 51, Tangier). As demonstrated in this excerpt, migration historically acted as a livelihood diversification strategy for many Riffians (which is in line with new economics of labour migration, cf. Chap. 2). As Farouk's family could not live from farming anymore as there was no food to feed the cattle, immigration was used as a coping mechanism.

Most respondents reported having not been personally impacted by the effects of environmental changes and did not consider them to have affected their own migration aspirations and trajectories. Households that are less dependent on natural resources to secure their livelihoods are less likely to suffer from the impacts of environmental change due to lower sensitivity and a stronger coping capacity. For instance, although Saida (30, Sidi Slimane), acknowledged that Morocco was a country that based its economy on agriculture and thus relied on rain and the environment, her family had not been affected by the lack of rain. Indeed, her father was working in the clothing retail and not food products, although the family did own a few pieces of land on which they cultivated orange trees and wheat respectively. While the first lot was never impacted by the lack of rain as it benefited from drip irrigation, the second relied on rainfall. Saida further nuanced the perceived impact of the lack of rain as her household did not rely on these agricultural products

for their subsistence but could easily buy their own wheat (at higher prices) if necessary.

Instead of suggesting the existence of direct linkages between environmental changes and migration between Morocco and Belgium, the composition of our sample aligns with previous findings demonstrating that Moroccan migrants are still mainly migrating to Europe to reunite with family members, especially through marriage migration, in addition to emerging forms of migration that include students or undocumented migrants (Timmerman et al. 2017; cf. Chap. 3). In fact, the majority of participants (n = 10) reported having migrated to Belgium due to family reasons while a minority reported having moved for work or study reasons. In some of the family reunification cases, the head of the household (here, the father) had initially migrated to Belgium for work and thus to improve his family's economic situation. For instance, Samir (53, Tangier) and his mother, joined the head of the household (their father and husband respectively) in Belgium, where he had moved in 1966 in the framework of the Belgian-Moroccan bilateral work agreements. With the exception of these family reunification cases consisting of respondents joining the head of their household in Belgium at a very young age, other cases consisted of spouses reuniting in Europe in order to live together. Some participants also reflected on their move as a way of starting over (e.g., after the death of a husband, a traumatic incident) or, simply, to start a new life. For Chafiq (63, rural outskirts of Tangier), who reported having migrated to Belgium in the 1970s for work, the initial goal was to improve his family's circumstances and access new economic opportunities through integrating an urban setting, as he was working in the farming sector and was facing a decline in agricultural activity, including a reduction in arable and cattle grazing land. Furthermore, given that multi-causality is a fundamental characteristic of human mobility, a mix of migration drivers, evolving over time and space, could be observed within our sample, although environmental disruptions were never explicitly identified by the respondents as a direct cause for their (internal and international) migration.

As we have demonstrated in this section, the Moroccan diaspora's comprehension of environmental disruptions in their home country does not imply that these changes will have had a decisive impact on their decision to migrate (nor that they are unaware of them, as demonstrated in the previous section). In the case of our sample, other elements, such as pre-existing migration networks, historical migration trends, and cultures of migration (cf. Chap. 7) appeared to play a more salient role in respondents' move to Belgium. This is in line with other findings from this book which suggest that the role played by environmental factors in shaping respondents' migration aspirations and trajectories had largely been overshadowed by that of social and economic factors and opportunities (cf. Chap. 6). Nonetheless, environmental changes in Morocco could have made migration more attractive for (young) people, who want to increase their future opportunities. On the one hand, this supports empirical studies that suggest most migration induced by environmental changes remains within national boundaries. On the other hand, this demonstrates that when climate change occurs in 'cultures of migration', where long histories of migration exist, its impacts on international outflows are not always readily apparent.

This lack of perceived relevance of environmental factors in the migration decision may, in turn, suggest that transnational practices of diaspora members will not be directly aimed at, or linked to, environmental resilience efforts.

#### 8.1.1.3 Transnational Practices and Environmental Resilience

Considering the awareness of environmental degradation in Morocco, but the limited or non-existent role of environmental change as a driver of migration to Belgium, this section questions whether perceptions of environmental matters affect transnational practices, and whether those practices improve the environmental resilience of their households and communities of origin in Morocco. We argue that such practices rely on the extent to which environmental changes are perceived to have a direct impact on the migrants themselves or their family in Morocco.

Transnational practices of Moroccan migrants cannot be understood without considering pre-existing cultures of migration, as well as the relationship between the Moroccan government and its diaspora. Since the late 1980s, the Moroccan government has encouraged the transfer of remittances to Morocco as a development and poverty reduction tool (Bouoiyour 2008; Dadush 2015; cf. Chap. 3). The latest World Bank report on migration and remittances ranked Morocco second (after Egypt) amongst countries that had received the largest amount of remittances in the MENA region; Morocco received 7.4 billion US dollars from its diaspora in 2018, amounting to 6.2% of GDP (The World Bank 2019). Similarly, visits of Moroccan diaspora members living in Europe have reached such significance that they have been institutionalized through governmental initiatives such as the annual transport coordination Operation Marhaba, which were launched to facilitate the travels of Moroccans Residing Abroad (*Marocains Résidant à l'Étranger*) who decide to undertake the journey (by boat) between selected Spanish, French, and Italian ports and Morocco (Tangier, Nador, Al Hoceima) between 5 June and 15 September (Opération Marhaba 2019).

In line with other research, three broad categories of transnational practices apply to the Moroccan diaspora in Belgium, namely: mobility (regular visits between Belgium and Morocco), communication activities, and material transfers (Zickgraf 2014). Regardless of the heterogeneity of their (perceived) levels of socio-economic integration into Belgian society and satisfaction with their current lives, the overwhelming majority of respondents had maintained strong ties with their community of origin, whether through regular contacts (maintained through telecommunications or physical visits to Morocco), financial remittances (including gifts in-kind and other material exchanges), and the transmission of information and ideas (social remittances).

While the large majority of the sample had close family members or members of their household of origin in Morocco, such as parents and siblings, the remaining respondents had, at the minimum, extended family, family-in-law, or friends in Morocco. The contacts with people living in Morocco were principally maintained

through telecommunications (by phone but also through WhatsApp or Skype, for instance) several times a month, but also through regular visits to Morocco, usually once a year, during the summer holidays. These contacts were made easier through the wider availability of communication tools such as the internet and advantageous costs for telecommunications between Belgium and Morocco. For most of our respondents, these regular interactions with their community of origin, both digital and physical, were perceived as crucial to staying updated with the situation of relatives back home, communicating about special events, but also for having first-hand accounts of the situation in the country of origin – justifying and leading to the transfer of financial and non-financial remittances in most cases. As such, financial remittances and other material exchanges can be seen as an extension of this aspiration to stay close to one's family or community of origin, exposing symbolic motivations for material and financial transfer (Zickgraf 2014; McKay 2007).

The overwhelming majority of respondents in our sample did (or used to) send back financial remittances, which they justified by family solidarity or religious reasons, and which, in some cases, were described as a *mission* or a *permanent* or *sacred* obligation. As suggested by Samir (53, Tangier), migrants may feel a certain duty to bring material gifts when going back home: 'For my father, it was out of the question to go [to Morocco] empty-handed. If there were no gifts, we didn't go'. Financial and gifts in-kind were therefore grounded into philosophical, moral, and religious principles. As expressed by Marouane (49, Larache) and others, *giving* and *helping* were indeed seen as leading to potential rewards, whether by God or individuals:

> *Marouane*: You know... Whether it's my family back there [in Morocco] or back here [in Belgium], or anyone else in any kind of situation, it's the same to me. What's important, when you can afford it, is to help when you can help. It's important to help because we only reap what we sow. If we help others and require help ourselves at some point, we will be helped too. That goes without saying, it's my philosophy.

Financial remittances were, therefore, mainly seen as self-evident and largely expected to cover the daily expenses of the household back home (e.g., food, housing, clothing, electricity, health, education), or made occasionally, in the case of health issues or life events (births, deaths), for instance. Another key moment of solidarity appeared to be religious holidays such as the Festival of the Sacrifice (*Eid-el-Adha*) where respondents reported sending money to buy the sheep and food for the feast. However, although financial remittances could be perceived as a risk mitigation strategy and as a way to remain close to one's community of origin, respondents never identified them specifically as a way to contribute to the environmental resilience of their households and communities of origin. This can partly be explained by the fact that, as demonstrated above, they did not perceive environmental changes to have affected them (or their household) directly, but also that respondents did not interfere with how the money was spent. As Nabil (50, Berkane) explained: 'Mothers are sacred, as we say. I have never asked mine what she does with the money!' As such, it appears that remittances sent by and for those

unaffected by environmental changes will only be peripherally linked to adaptation to environmental changes and resilience.

Therefore, there is little evidence so far to suggest that Moroccans in Belgium prioritize environment as a key challenge and, therefore, as a potential object of their transnational practices: assuming that remittances and other practices will be, or are, an adaptive tool neglects this important point. They may, however, have a direct impact on the income structure of the household and improve its capacity to cope with surges in commodity prices that are linked to drought phenomena. Moreover, it is possible to recognize the potential spillover effect of financial remittances on environmental resilience by improving the socio-economic conditions at the household level and therefore increasing coping and adaptive capacities in response to potential environmental shocks and stressors.

## 8.2 Conclusions

Findings from this chapter demonstrate that Belgian first-generation migrants from Morocco are at least to some extent attuned to the impacts of environmental change as well as historical experiences of environmental degradation in their country and communities of origin. As mentioned above, this may be facilitated by the relatively high average level of educational attainment across our sample. Nevertheless, opinions on whether environmental change is currently a major challenge facing Moroccan populations varied, with some believing it had largely been resolved by state intervention.

These perceptions of environmental changes at the meso level, however, did not drive the respondents to migrate to Belgium: migration to Belgium from the North African country continues to follow historical, more classic, pathways related to family reunification, education, and economic opportunities, amongst others. However, Moroccan migration to Belgium is dynamic and ever-evolving (Bousetta and Martiniello 2003; cf. Chap. 3), so this does not preclude a stronger, more discernible future impact of environmental change on Moroccan migration to Belgium, particularly when that migration occurs out of more rural, natural resource and agriculture-dependent areas. Moreover, we acknowledge that our relatively small sample, leaning towards urban middle-class households, may have limited our ability to sufficiently capture current environmental drivers of nation-wide out-migration and domestic migration flows. These findings do support other empirical studies within and outside of the Moroccan context underscoring the primarily internal character of environmental migration (Wodon et al. 2014; McLeman and Gemenne 2018; IDMC 2020).

Additionally, the evidence from this chapter indicates that one must not assume that all people who leave areas affected by environmental changes do so because of those changes, particularly in places that have long histories and cultures of migration for various reasons (cf. Chaps. 5 and 6). Differentiated vulnerability within a given community results in variation in the extent to which climatic and

environmental changes are directly 'felt' by households and individuals, and less sensitive households – e.g., those not dependent on agricultural livelihoods – which, in turn, affects their migration motivations as well as their subsequent transnational practices (Portes et al. 2002; Eckstein 2010). While validating the significance of transnational exchanges between Morocco and Belgium, including financial and social remittances, the motivation for engaging in these practices was primarily to maintain or reinforce familial relationships and obligations at a distance. Therefore, if households in the community of origin are not currently facing environmental duress or do not need to due to financial remittances sent from their relatives living abroad, it is unlikely that transnational practices will – intentionally – affect environmental resilience and adaptive capacity to climate change.

Nonetheless, even if migrants did not direct their transnational practices towards environmental resilience, it does not mean that environmental resilience and adaptive capacity cannot be 'collateral' by-products of long-established cultural and historical transnational relationships and practices, peripherally linked to adaptation and environmental resilience. Social and financial remittances, transferred through communication, mobility, or material exchange can still support long-term development and adaptation in communities of origin. They can do so through, for instance, improving general socio-economic well-being, decreasing disaster displacement risk through the construction of new homes, and stimulating local economies and other spill-over effects for the meso level (Levitt 1998; Kusunose and Rignall 2018; Nyberg Sørensen 2004). This, however, is not an inevitable outcome, as demonstrated by the breadth of scholarship on the migration-development nexus.

In conclusion, remittances from international migration, while in our case bringing benefits to the communities of origin, cannot be counted on as a primary adaptation strategy or means of building community-level environmental resilience, as expected by migration-as-adaptation discourses. Migrants, who individually or collectively are not directly affected by environmental changes, with the means and desire to engage in transnational practices outside of their family networks, would most likely have to be incentivized to support, financially or otherwise, community-based projects targeting environmental resilience, sustainable development, or climate change mitigation or adaptation efforts, for example by reducing international transfer fees or adding a percentage to agricultural investments. Conversely, estrangement with one's community of origin may pose a barrier to action and prevent or inhibit such transnational practices. These ties may also fade or weaken, but dormant ties may reignite with subsequent generations (Zickgraf 2014).

The scientific community, the public, and policymakers should consider the adaptive potential of migration-as-adaptation and steer away from uniformly negative depictions of the relationship between migration and environmental changes. Even so, we caution against implicitly or explicitly considering these challenges as the 'migrant's burden'. Undoubtedly, social and financial remittances cannot substitute for adaptation interventions by governments and international organisations.

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# Chapter 9
# How Environmental Changes Result in Migration Aspirations and Other Adaptation Strategies of Moroccan Inhabitants and Migrants in Belgium


This book provides a unique approach to the Moroccan context. Many researchers have conducted fieldwork in Morocco, departing from migration studies (e.g., De Haas 2003, 2006, 2010; Czaika and De Haas 2011; De Haas and El Ghanjou 2000), while others solely focused on environmental and climate changes (e.g., Schilling et al. 2012), leaving the interplay between both to be explored more in-depth. The Moroccan context offers a unique research context because it is confronted with gradual environmental change over the last decades and has initiated considerable action at the national level to develop policies or strategies to counteract these changes. Hence, Morocco in 2019 ranked among the leading countries in the fight against climate change on the Climate Change Performance Index (Burck et al. 2019). Furthermore, Morocco evolved into one of the world's leading emigration countries in the second half of the twentieth century, being characterized by unexpected developments, including colonial migration, labour migration, family reunification, and, recently, undocumented migration. This led to a high degree of internal differentiation within the Moroccan migrant population and strong and influential migrant networks (De Haas 2007; Schilling et al. 2012; cf. Chap. 3).

Considering this particular Moroccan context and migration to Belgium together with previous insights from migration research, in Chap. 2 environmental migration is approached from existing and well-known migration theories to serve as a starting point to frame the empirical findings and guidance throughout the fieldwork. The chapter serves to reflect more on the ways in which ongoing migration dynamics itself interferes with changes in the natural living environment. These insights, as well as the first encounters throughout the fieldwork, already suggested that not all inhabitants in a specific region perceive and interpret environmental changes in a similar way, as later studied in Chaps. 5 and 8, and how this impacts the development of adaptation strategies, as examined in Chap. 6. The importance of the ongoing migration dynamics is mainly elaborated upon in Chap. 7, as analyses delve deeper into how environmental changes fuel migration aspirations and how this is embedded within the prevailing cultures of migration in Tinghir and Tangier. Finally, the importance of cultures of migration, migrant systems, and remittances



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for (environmental) migration is examined in Chap. 8, which studies how migrants coming from Morocco and currently living in Belgium re-interpret their migration trajectories, in retrospect, to reflect upon the environmental changes in their country of origin and discuss how remittances are sent and used by their families. The research design and methods applied in this book are part of the wider MIGRADAPT research project (cf. Chap. 4) and allow us to elaborate in depth on the perceptions of environmental change, linkages with migration, and other adaptation strategies of people involved. Attention could thus be given to meaning-making processes, responses, and explanations of people living in gradually degrading areas from an open perspective, without being guided by ongoing climate change discourses that prevail in Western societies and dominant institutions, such as the Intergovernmental Panel on Climate Change (cf. IPCC 2014).

In the fifth and sixth empirical chapters, belief systems of people living in Morocco are examined to understand how perceived environmental changes are being linked to migration aspirations or trajectories themselves. Although at a macro-level, this linkage seems to be made easily, this relationship is not so straightforward at the individual or community levels.

In Chap. 5, the main finding that forms the red threat for the rest of the empirical chapters is that people living in Tangier and Tinghir do not necessarily approach environmental changes from a purely scientific perspective (cf. Chap. 8). Furthermore, given the relatively large timespan for these changes to occur, especially in the gradually-degrading natural living environment of Morocco, environmental changes are not always so easy to perceive by individuals. This finding has far-reaching impacts on the study of environmental migration since this is a condition for categorizing migration aspirations and trajectories in terms of environmental migration or to conceive migration as an adaptation strategy, or both. The chapter investigates two main research questions, namely how people perceive and explain environmental changes in their immediate living environment. Perceptions of climate/environmental change depend on knowledge of scientific climate change discourses and human-nature relationships (Salmón 2000; Rigby 2016). Perceptions of environmental change vary across and between regions, which in most cases relates to the personal experiences people (and their networks) have with the consequences of environmental change for their daily activities and income.

Within regions, differences in the knowledge of climate change discourses are noted that depend on individuals' educational levels as well as their migrant networks (especially in Europe). The means for acquiring information about environmental changes in the immediate natural environment, as well as the knowledge of climate change discourses, seems to also play a crucial role in the extent to which people think these environmental changes are happening within their immediate environment, and how people explain such changes. More specifically, people who personally have seen environmental change or are confronted with its consequences seem to frame it more often in terms of natural cycles and laws, or refer to God, implying the adherence of ecocentric or theocentric human-nature relationships. This group of respondents consists especially of lower educated people. Respondents who are far more aware of 'statistical' climate change discourses do not

necessarily relate these to the local Moroccan context or estimate the impact it can have on people's everyday lives.

These findings are in line with prevailing ideas on nature and religion, within both the Islam and Amazigh cultures (Hart 1999; Izzy Deen 2003; Ammar 2013; Karrouche 2017). More specifically, religious beliefs and views on nature are considered when studying the ways people look at and deal with environmental changes and issues, such as water and drought. Although there are many prescriptions on nature conservation in Islam, this relates to people's own behaviour regarding nature conservation, and not necessarily to feeling the adverse impact of gradually-degrading environmental changes in one's living environment and developing adaptation strategies to deal with those or to avoid risks related to environmental changes. Rather, these verses and overall attitude suggest that one should live in harmony with nature and respond accordingly. Hence, this does not automatically relate to statistical climate change discourses. This leads to the finding that different learning methods for acquiring information on environmental changes in Morocco – through education or the media about more official and scientifically-approved climate change discourses versus the development of tacit knowledge and skills that are built up over the years when working in affected domains. This also means that not the entire population is aware of environmental change, and hence, merely sees the lack of employment opportunities, the relatively lower standard of living, and the search for better opportunities to improve one's lives and spread risks in the household.

In general, the findings of Chap. 5 show how human-environment interactions differ across the globe and how variation within regions are even bigger when facing rapid development, changes, and having large disparities in educational level, ranging from illiterate people to people who have attained higher education (abroad). Moreover, the ways in which people living in Morocco modify, symbolize, and adapt their immediate natural environment varies considerably, and especially, deviates from the dominant perspectives present in international conferences on climate change (cf. IPCC 2014) and treaties (cf. Paris Agreement, etc.). In line with recent trends in cultural and political ecology, the chapter demands the inclusion of power structures, discourses, and identities in ecological settings. In doing so, local communities and prevailing beliefs concerning environmental issues need to be considered in order to also incorporate the broader political and economic contexts in future research (Haenn and Wilk 2006).

Chapter 6's findings lead to a better understanding of how individual migration aspirations are developed, framed, and linked to the changing natural environment. An important finding that results from the data is that environmental change is not necessarily perceived as a risk that needs to be countered by actively developing adaptation strategies. Instead, environmental and societal changes together form the basis to seek ways of adapting to this changing situation as best as possible. While migration could be one potential adaptation strategy – and people aspire to migrate or have migrated before – environmental changes are not seen as sufficient reasons to (be willing to) move away from areas or relatively smaller towns such as Tinghir. Hence, migration aspirations and projects should be understood within the wider

social, economic, political, and cultural contexts and is also perceived as such by the people involved. Analogous to the findings of Chap. 5, the explanation given to environmental changes and the knowledge of climate change discourses is a determining factor to understand how people deal with environmental change or develop individual/community/societal adaptation strategies. Furthermore, the use of particular adaptation strategies is very much limited by the available resources, abilities, and knowledge at the disposal of individuals and households. This is also reflected in the small number of community-wide projects or initiatives undertaken to counteract environmental change and its consequences. Resulting from this chapter, individual adaptation strategies are not necessarily in line with adaptation strategies developed at other levels of governance. This could contribute to the creation, or the further strengthening, of social inequalities when facing the consequences of environmental changes (Adger et al. 2009). Rather, these individual adaptation strategies are structured by constraint opportunities, expectations of environmental change and risks, and a mixture of perceived and expected desired future realities, and impacted by climate change discourses, previous experiences, and available resources. These results indicate the social embeddedness of migration aspirations and environmental changes and how they further reinforce existing social inequalities. The focus on this topic is important when shifting the perspective slightly from mitigation to adaptation, and from the macro- and meso- to the micro-level. When doing so, decision-making processes of people and strategy-making in a constrained environment needs to be taken into account (Zetter 2017).

Taking insights from both Chaps. 5 and 6 together, some general conclusions can be drawn on this topic of study. The discordance between global climate change discourses and perceived environmental changes in one's local and immediate contexts seems to hinder the creation of well-developed and informed adaptation strategies directed at environmental changes and are rather converted into survival strategies of individuals facing economic hardship. People who were aware of environmental change discourses are often unable to apply these abstract ideas into their own living environment (Adam 1998, 2005). This general difficulty of 'climate change discourses' – often placed in a faraway geographic region and categorized in futuristic terms and debates centred on and dependent upon future predictions (Adam 1998, 2005) – are even more pronounced in the studied regions in Morocco. The differences in educational attainment, literacy, and professional attainment to a large extent determine the level of knowledge on this matter and awareness of prevailing discourses on environmental change. These diverging discourses are rooted in the clustered differences in age (and hence capacity to observe environmental changes in one's own living environment), literarcy, and education level (and access to sources or knowledge of climate change discourses) and gendered roles in the household, social life, and division of labour. For instance, females are more inclined to work in the fields and experience environmental changes first-hand; males are more pressured to provide for their family or in administrative functions, or both. Furthermore, people's views on the human-nature relationships are a crucial element in the understanding of how migration aspirations and actual migration trajectories are developed and linked to environmental changes.

The reasoning behind environmental migration is actually quite extended, which is visible through a wide variety of elements, all following up on each other and entangled with other contextual features. This complicates the perceived linkage between environmental changes and migration, especially in a gradually-changing natural environment like Morocco. As a precondition to linking these elements to each other, people must reflect upon a long chain of factors, at both micro and macro levels, that result in migration.

In Chaps. 7 and 8, the importance of migrant networks, dynamics, and cultures of migration are examined in greater depth. These chapters build further on migrant systems theory, migrant network theory, segmented/dual labour market theory, transnationalism, and new economics of labour migration (cf. Chap. 2). Following *migrant network theory*, extensive migration networks have been established since the second world war that have led to chain migration. Partly because of this, environmental migration motivations are often overshadowed by, or intertwined with, other factors that coincide with such environmental changes or are the consequence of such changes. Building further on this, *migrant systems theory* has posited that, after initial migration has taken place and communities have been built abroad, cumulative causation and contextual feedback results in the further continuation or hampering of migration. This is found to differ across Tangier and Tinghir, as well as within the municipality of Tinghir, due to differential socioeconomic positions and access to migrant networks. The current economic and political situation in different cities in Morocco (i.e., the vibrant and growing city of Tangier vs the gradually-degrading environment in Tinghir, in terms of agricultural innovation and environmentally, combined with an ageing population) have created large social inequalities within Morocco, with an increasing segmentation of the labour market, and different needs, abilities, and vulnerabilities with regard to employment. These employment circumstances of individuals and households further creates the need for migration and the ability to develop migration aspirations. For example, environmental changes –combined with the lack of investment in agriculture and migration opportunities and remittances – seem to lead to fewer employment opportunities in Tinghir. This particularly affects the younger generations, who are still willing and able to migrate, but who have also lost interest in 'outdated' agricultural activities in their immediate living environment. Finally, transnational ties and social and financial remittances do not automatically lead to the creation and development of suitable adaptation strategies, at the individual and community levels, to better deal with environmental change. The Moroccan government's efforts seem to apply to particular regions and state-level efforts, such as construction of dams or solar panel gardens, but does not visibly impact households or reduce the need to migrate. Households often respond to deteriorating environmental conditions and economic opportunities by diversifying risks in the household and developing 'intergenerational' migration aspirations. *In casu*, in affected households, both young and old wished that especially the young (males) would be able to migrate and create a better life elsewhere. While thinking of cross-border migration would mainly go beyond imagination, most households referred to moving to larger urban

areas, such as Tangier or Casablanca, with (perceived) growing economic opportunities.

Chapter 7 examined the nexus between environmental changes, culture of migration, and migration aspirations. In the two emigration areas studied, distinct views on migration to Europe are widely shared. More specifically, the consequences of migration did not necessarily lead to the development of similar cultures of migration (Timmerman et al. 2014b). Morocco's migration history and consequent migration dynamics have resulted in the formation of more or less three distinct cultures of migration: one prevailing in more advantaged social milieus in Tangier, one shared by internal migrants in Tangier searching for better opportunities in Morocco or elsewhere, and one in Tinghir that especially emphasizes the positive consequences of migration for people with access to transnational social capital. These cultures of migration are shaped through (the lack of) cumulative causation of transnational social networks. The existing cultures of migration in Morocco, in this case in the regions of Tangier and Tinghir, especially demonstrate how widespread migration has formed future migration dynamics and reshaped social structures and organization in Morocco, even contributing to the widening of social, ethnic and gender inequalities. This also impacts people's vulnerabilities towards environmental change. Individual vulnerabilities to environmental changes differ across age, gender and educational level, professional experience and migrant networks. Especially in Tinghir, having access to transnational social capital (Portes et al. 2002; Eckstein 2010) seems to matter for the current shaping of vulnerabilities towards environmental changes in the immediate living environment. People with access to transnational networks also more easily access resources to diversify their income and reduce their vulnerabilities against environmental change. Respondents without transnational networks are more vulnerable to the consequences of environmental changes as they still rely on the subsistence economy for survival or to complement their family income, and are at the same time unable to migrate to other regions or countries. Consequently, through the remittances sent, migrant networks decrease individuals' vulnerabilities to environmental change, albeit not at the societal and community levels.

Finally, in Chap. 8, Elodie Hut and Caroline Zickgraf examined the relationship between migrants' perceptions of environmental changes, the causality of migration, and subsequent transnational practices' impacts on environmental resilience and adaptive capacity in communities of origin by focusing on the Moroccan diaspora in Belgium. This chapter offers insights on the multi-causal nature of migration journeys and other structural elements that come into play in the Belgo-Moroccan context, such as pre-existing migration networks, historical migration trends, and cultures of migration. Furthermore, the chapter tests the concept of 'migration-as-adaptation' and appraises its relevance within the field of environmental migration. The chapter's results stress the limited and relative (perceived) importance of environmental factors compared to other social, economic, demographic, and political drivers of human mobility. Interestingly, within this sample of Moroccans who had migrated to Belgium, socio-economic and especially family-related reasons appeared as the main factors that initiated the development of migration aspirations

and plans – despite the impact people in Morocco feel from slow and gradual environmental changes, such as drought, especially the irregular and erratic rainfall that makes them aware of these changes. As also suggested in earlier chapters, people who migrated are not necessarily those who were most heavily impacted by these environmental changes for their personal living. The impact of environmental changes should be seen as seeming to be different across social classes and professions, and thus often related to education levels as well. The findings of Chap. 8 highlight how 'migration-as-adaptation' could be used within this context and should be considered within the structural context of the Belgo-Moroccan context.

To conclude, both Chaps. 7 and 8 demonstrate that environmental migration should not be studied in a social vacuum but should be approached from a migration perspective as well. Focusing too closely on migration as an adaptation strategy for dealing with environmental change may sometimes be misleading and fail to grasp how migration trajectories take shape. Additionally, by consolidating insights from Moroccans living in Morocco and Belgium, the empirical findings seem to align with each other. The combination of both migration contexts suggests that in many cases migration aspirations and trajectories should be understood within the broader social, economic, and political contexts. Both those who have already migrated and those who have not but aspire to (themselves or future generations) consider their own socio-economic situation and the ability to migrate (cf. Carling and Schewel 2018; Zickgraf 2018). Furthermore, there also appears to be a mismatch between those who are more able to migrate and those who are most heavily affected by environmental changes for their family survival. This is an important finding since it means that the people most vulnerable to the impacts of environmental changes, within this specific context, are also those who are often not able to aspire to or imagine migrating. In a context of slow-onset environmental changes, this seems to result in the creation of 'trapped populations', which can then be interpreted as vulnerable groups, heavily affected by environmental changes, who are in general too poor to migrate themselves. Adding more insights from migration theories, it is not surprising that especially the most-affected people are those most vulnerable in society, i.e., females, elderly, and those from lower socio-economic classes or working in agriculture. Migration visions are thus reserved for future generations or directed towards less favourable destinations (within Morocco or less industrialised countries) to work in difficult labour conditions and be less able to use their migration as an adaptation strategy to deal with environmental change. Rather, their migration trajectory will mainly be undertaken for individual survival and less to structurally contribute to ways in which the migrant and their family will be able to shield against even worse environmental conditions or counteract disruptive effects of environmental changes.

## 9.1 Useful Insights for Policymakers

*Concerning perceptions of environmental change,* a multitude of perceptions exist and need to be taken into account when designing environmental *and* migration policies. This is an especially useful finding with regard to international policymaking and panels on environment-related issues. Overlooking people's visions on nature and the position of humans in this vision, the social, cultural, and religious embeddedness of discourses related to the environment, nature, and destiny, and finally people's explanations of environmental change may cause a mismatch in the developed policies and instruments to mitigate and adapt to climate/environmental changes, resulting in policies that miss their target. In line with this and in order to apply adaptation strategies in a successful way in regions highly affected by environmental change, inhabitants need to be sensitized about environmental changes before being able to actively set out adaptation strategies at the individual and community levels. In doing so, attention should be given to how generic climate change discourses are applied to the local context. Furthermore, it is important to note that policymakers cannot expect a shift in people's views on environmental changes nor should they force this. Therefore, dialogue on environmental issues is necessary before co-creating adaptation strategies between policymakers and community members to deal with environmental change that also fit everyday reality, local cultures and views, and informs individual and policy decision-making. Finally, policymakers could pay attention to how ongoing discourses on environmental change are used and help individuals, households, associations, and local communities to make informed decisions about the adaptation strategies people will use and allow the development of long-term strategies.

*With regard to the development of adaptation strategies to deal with environmental change,* more coordinated action is necessary and evaluation research on these actions is highly needed. This could take place at the level of organisations grouping together both resources and knowledge to counteract the disruptive effects of environmental changes in people's living environment. As stated above, these actions need to consider the diversity of explanations and views on environmental change. Additionally, policymakers should develop policies that reduce vulnerabilities towards environmental change, assist (or even fund) organisations when designing their policies, or play a redistributive role in the resources gained from migration. Finally, policymakers could group together knowledge on all available adaptation strategies for people living in a particular region to facilitate the dissemination of knowledge on how to deal with environmental change in a specific setting. The role migration could play in the development of these adaptation strategies, or as an adaptation strategy itself, however, is not so straightforward.

With respect to *the migration context and local cultures of migration*, it often seems hard (and undesirable) for policymakers to counteract ongoing migration dynamics and the sending of remittances to families and communities of origin that may interfere with environmental or even developmental policies. Policymakers could, however, rethink existing migration policies or application procedures for

migrants that are restricted to the individual level and do not consider the overall impact of environmental changes on the wider environment or consider families and different generations as a whole. People's adaptation strategies towards environmental changes and their inability to migrate are clearly embedded within larger socio-economic and political structures (cf. Schilling et al. 2012) and legal frameworks, and driven by the prevailing culture of migration and networks. Hence, this complicates the development of adaptation strategies of individuals, households, and even communities when facing environmental changes. Therefore, the development of adaptation strategies should be multi-tiered and start at the governmental level. The combination of a coordinated policy with different policy levels is necessary as environmental adaptation is seen in international policies as something to be organized at the local or regional level, whereas this is not necessarily the case for migration (IPCC 2014). The collective grouping or organizing of adaptation strategies seems to be insufficient to reach those groups who are most vulnerable, and furthermore do not consider the differentiated vulnerabilities of males and females. Therefore, a differentiated approach towards adaptation strategies within communities needs to be applied that helps identify a more precise evaluation of the needs and vulnerabilities of the local population when reducing environmental change impacts and helps map out the barriers towards a successful implementation of developed adaptation strategies (Biesbroek et al. 2013). This differentiated approach could reduce the unequal vulnerabilities regarding environmental change, which continues to give rise to migration aspirations. This also requires the investment in education for all and equal access to collective goods and resources, a redistribution of money and resources, defragmentation of lands, and investment in the introduction of modern technologies in agriculture. In short, this will require more redistributive societal changes. When looking at the role migration could play as an adaptation strategy for dealing with environmental change, future policy initiatives could canalize how migration could contribute to structural investments in the region of origin that even prevents migration and maladaptation to environmental change (cf. Lobell et al. 2013; Khachani 2009; Nyberg Sørensen 2004).

*For diaspora communities across Europe and elsewhere,* policymakers could assist local migrant communities to reflect on the ongoing larger and structural difficulties people living in their region of origin face. As most migrants mainly contribute to the overall survival of the people within their networks, remittances are often insufficient in helping deal with disruptive environmental changes. Furthermore, given the fact that remittances often contribute to creating of social inequalities within communities in Morocco, their social networks are often not those most-heavily affected by these environmental changes. Rather, because of the remittances they receive, they are able to move away from businesses or occupations with a higher risk to adverse impacts of environmental change and suffer less from environmental change in their daily lives. Policymakers, non-governmental organisations, and initiative-takers could help migrant communities reorient remittance practices into actual and successful adaptation strategies for dealing with environmental change.

When translating these findings into the *legal and policy debates* that evoke the study of environmental migration, the question that needs to be asked is: '*how can the findings of this book contribute to the development of a new category to secure the protection of environmental migrants and displaced persons*?' (Havard 2007). While the main insights in these debates are that they further challenge the existing difficult categorization of migrants and refugees according to their 'migration motivation' – i.e., as being economic, political, humanitarian, or family-related. Crawley and Skleparis (2017) refer to this as 'categorical fetishism', which is even more visible when attempting to develop new migrant categories. As many migration reasons overlap and interact – which is certainly the case for environmental factors – the categorization of movements based on their migration motivation is additionally challenged and seems hard to maintain in the future. This is especially so for environmental migrants. Policy decisions will have to be made about who exactly falls under the category 'environmental migrant/refugee' and at which policy level this needs to be done (e.g., European, local, national, global). When drafting this category, attention must be paid to internal migration processes (McLeman and Gemenne 2018), immobile vulnerable groups unable to migrate themselves (Zickgraf 2018), the self-categorization of environmental migrants (cf. Chaps. 5 and 6), and the specific time dimension of environmental changes and migration processes (Beck 1992; Wodon and Liverani 2014; Collyer 2010). Even when all these elements are perfectly defined, it remains a difficult and complex task to determine how environmental migrants or refugees can be recognized and which immigration country/region needs to host this group. An additional challenge for the categorization of environmental migrants relates to how the impact of environmental changes, especially gradually-occurring, can be demonstrated (Havard 2007). Finally, when creating such a category of environmental migrants and the protection and hosting of this group, there is an additional ethical question that will be hard to respond to (in this book), namely: '*In developing these policies, should policymakers consider prior social, historical debts and responsibilities related to the emission of greenhouse gases?*' The creation of a new category of 'environmental migrants' and the debates surrounding this issue show that the existing legal migration frameworks are increasingly being challenged. Creating an appropriate policy requires political courage, international cooperation, and an integrated regional policy on climate adaptation.

This book's findings suggest that, when considering the actual nature of environmental migration patterns and trajectories, *more regional approaches* could yield further interesting results. This way, policymakers could consider the very regional environmental changes and impacts, as well as the migration dynamics, within a particular broader social, political, and economic context. Hence, building on these insights, it would be necessary to develop a clearer legal framework and possibly create a new category, indicating when someone from a certain region can appeal to this framework in cooperation with the country/region of origin. Analogue to the category of 'internally displaced persons', a category of 'environmentally displaced persons' could be developed. When doing so, policymakers should learn from the difficulties in the development of a policy framework for the protection of 'internally

displaced persons'. For instance, the implementation challenges of the AU Kampala Convention show that one should not only look at these conventions, but also provide support for their successful implementation (cf. AU 2009). Building further on these insights, it is necessary to develop a binding legal framework around this concept (UNHCR 2018; Stavropoulou 2008; Havard, 2007; Biermann and Boas 2008). An alternative option is to consider the role of the natural environment and changes in it when developing international and generic migration agreements, such as the UN Global Compact for Safe, Orderly and Regular Migration (GCM) (UN 2018). Or, to develop a regional approach to environmental migration and displacement (UNHCR 2018; Stavropoulou 2008; Havard 2007). As the findings of this book illustrate, in Morocco, many small-scale initiatives, grassroots activities, and associations were set up that are highly dependent on remittances and the input of migrant networks. Therefore, a third option is to develop a new international framework that, for example, does not touch upon the Geneva Convention but focuses specifically on environmental migrants and displaced persons living in a particular region.

Biermann and Boas (2008, 2017) expect that future technological developments will enable us to better assess the risks for people living in a specific region and which can help to implement a more targetted regional plan. In their plea for a separate legal framework, five principles must be maintained in order to provide adequate protection for climate migrants – and to also be successful. First, this agreement must focus on the planned and voluntary resettlement and reintegration of the persons concerned over many years and decades (i.e., no emergency solution). Second, unlike some political refugees, this new framework should involve the permanent migration of environmental migrants in the migration regions. Third, such regimes should not be adjusted to individuals but to entire groups, such as the inhabitants of certain villages, cities, regions, or even countries, such as the people living in the Kiribati Islands – also known as the first 'climate refugees' (Farbotko and Lazrus 2012; McNamara and Gibson 2009). Fourth, governments and local communities must also be supported in organizing and financing the protection and resettlement of environmental migrants, when they request it. Finally, the protection of climate refugees must be seen as a global responsibility, especially since most environmental migrants are very poor and have also made little contribution to the emission of greenhouse gases. The authors hereby refer to an 'international list of populations concerned', provided by countries and regions themselves and supported by an international committee. Havard (2007) also refers to the potential of regional agreements, such as regional treaties that extend the Refugee Convention further to include specific refugee problems in Africa. Even if the policy on environmental migration and displacement is part of an integrated climate adaptation plan, regional definitions, partnerships, and policies can offer advantages (see UNDP 2018). This regional approach can allow policymakers to evaluate environmental migration alongside other adaptation strategies to deal with environmental changes. Furthermore, the use of an integrated approach would help to place climate migration in a broader social, political, and economic context, and thus better assess the effects and processes of environmental migration (UNDP 2018). In other words, a

more differentiated and regional approach, with an international framework and support, could offer a way out for the better protection of a 'difficult to categorize' group. Finally, given the specific relationships between environmental changes and migration, one can also protect a specific target group. An example cited by Morel and De Moor (2012) in the context of international migration law, are migrant workers who, voluntarily or not, have to migrate due to the adverse effects of environmental change whose movement can be made easier through bilateral and multilateral agreements to migrate. This way, the differential impact of environmental changes on the population and regions can be better taken into account, which could be an asset.

## 9.2 Future Research Recommendations

Based on insights gained in the making of this IMISCOE Springer book, some recommendations can be made for further research.

For starters, in book's first part presents a theoretical framework to better focus on the ways people adapt to their changing natural living environment and how this might lead to *migration aspirations* and actual migration trajectories. The emphasis on the development of migration aspirations and how this could lead to potential migration trajectories is of particular interest for the body of research on environmental migration for four reasons. First, the focus on migration aspirations helps to grasp the gradual development of migration decision-making processes. Second, examining migration aspirations helps to provide a better understanding of how self-categorization processes of environmental migrants could work. Third, migration aspirations reflect the social fabric that shapes environmental discourses, perceptions about environmental changes, and migration dynamics. Finally, when studying migration aspirations first, instead of solely focusing on migration outcomes, one can also involve immobile groups who are unable or unwilling to migrate, as well as environmentally (internally) displaced persons. Hence, we argue that if scholars have a better understanding of the development of migration aspirations within a particular context, they will also be more able to understand related migration patterns and dynamics. Moreover, this focus contributes to the field of environmental sociology as it helps to better understand how people respond to their changing living environment, perceive it and opportunities therein, and adapt their aspirations to the perceived ability to deal with their environment (Dunlap and Marshall 2007; Gross and Heinrichs 2010). In doing so, this study aims to enable future researchers to better map out the vulnerabilities of people facing environmental changes and to contextualize their actions (Zickgraf 2018; Bose, 2016; Büscher and Davidov 2016).

Second, using the *methodological approach* to study environmental migration yields some interesting results and insights for future research. This research design seems to particularly novel due to the inclusion of immobile groups ('trapped populations', Zickgraf 2018) by focusing mainly on migrant aspirations and contrasting these against the migration trajectories when studying environmental

migration. By including those groups unable to migrate, it also becomes clear that the constraints they perceive, complicate even the possibility to think of migrating themselves. Rather, migration aspirations are channelled through their wishes for their children. The latter is an interesting finding when developing questionnaires and interview topic lists to gauge people's migration aspirations (cf. EUMAGINE project, Timmerman et al. 2010, 2014a, b; Van Mol et al. 2018). The inclusion of these groups in the research sample was the most difficult part of the data collection, especially as this mainly involves the most vulnerable groups in society who are also the least alike the profiles of the researchers themselves. A second novelty of the applied methodological design for the study of environmental migration concerns the focus on two case studies in Morocco, which helps compare how different contexts perceive and are affected differently by environmental change – as well as many other societal factors – and how all these factors and ongoing changes interplay. Both regions attract different profiles of migrants, who are in some cases also searching for better opportunities elsewhere. Nevertheless, internal migrants and people considering migration in the future are not that easy to find and this almost always resulted from the interviews. Thus, the selection criteria, involving a diverse group of people with diverse migration trajectories and aspirations, often had to follow from the diversification of other sociodemographic background characteristics in the sample. The shift by the researcher in Morocco to focus on elderly females for the study of immobile groups was initially a lucky shot that led to fruitful results in terms of including new voices and perspectives in the research sample. This took considerable effort due to the gendered task divisions and social spheres in which men and women find themselves in the Moroccan context and their participation in 'outside' public life. These insights and experiences could be included and systematically studied in future research. Another difficulty of the research sample included in this book relates to the selection of the research population in terms of migrant trajectories and exact regions of origin, in both Belgium and Morocco. Linking migrant trajectories in regions of origin and destination together turned out to be more complicated than expected and hard to query during a first contact moment. Future research could also incorporate non-Moroccans (e.g., sub-Saharan African migrants) living in Morocco in the research sample as Morocco has become a key transit/destination country, especially in light of the fact that many (fragmented) migration journeys of sub-Saharan African migrants are often shaped by environmental factors (Lahlou 2015).

Third, as became clear from this book, the *regional impact of environmental changes*, as well as the *local and historical migration dynamics* matter for the ways in which environmental changes relate to migration aspirations and dynamics; and additionally, how this could lead to further maladaptation to the environmental changes or the development of better adaptation strategies to deal with environmental changes within this particular region. More regional case studies are needed for a better comparative study on how regional migration dynamics interfere with environmental changes and vice versa. With regard to the Moroccan case, the specific geographical, social, and political situation of distinct regions make their comparison very valuable. For instance, there has recently been more political turmoil in the

northern region, near Oujda (Lahlou 2015), more economic investment in Tangier such as Med Port (El Imrani and Babounia 2016), an increase of environmental policy strategies in the southern part of Morocco, notably Plan Maroc Vert (El Bilali et al. 2012), making the comparison of these regions highly valuable.

Fourth, across and within countries, it would be interesting to examine the extent of the relationship between migration and environmental change, depending on the *nature of the environmental changes* (e.g., abrupt/gradual, floods/drought/heavy snowfall/sea level rise, etc.; cf. Bates 2002). Such environmental changes could be the trigger of continuous migration flows to nearby or distant destinations. At the same time, existing migration dynamics could be an incentive to increasingly aspire to migrate, especially when living in a deteriorating natural environment. As shown by the results of this book, which mainly considered gradual environmental change in Morocco, these environmental changes take more time and therefore interact to a high extent with other ongoing societal changes and rely on existing social structures. While these general conclusions may not differ that much from the case study by McLeman et al. (2016) on Hurricane Katrina, in which people are confronted with sudden weather shocks, the ways in environmental changes and their consequences affect people's everyday lives, societal structures, and communities differs.

A fifth point, that also adds to the previous one, relates to the need of future research to explicitly include the ways in which *social, ethnic, and gender inequalities* are strengthened or created through environmental change. This is necessary since vulnerabilities towards environmental changes vary across gender, socioeconomic status, profession, education level, and regions. Although often referred to in general in existing literature, the investigation of how existing inequalities are further reproduced and put under increased pressure due to environmental stressors is still in its infancy (McLeman et al. 2016). Especially with regard to *gender*, this research indicates that more in-depth analyses are needed to fully understand the development of migration aspirations due to environmental change. Previous research already found that gender is entangled with effects of disasters (e.g., McLeman et al. 2016), matters for decision-making during (environmental) migration (Obokata et al. 2014; Van Mol et al. 2018; De Jong 2000; Boyd and Grieco 2003), and leads to different vulnerabilities, sensitivities (Chindarkar 2012) and adaptive capacities to environmental/climate change (Masika 2002). Furthermore, gender does not only matter for the active undertaking of migration trajectories, but also for those who do not manage to migrate (Boyd and Grieco 2003) as well as for migration aspirations (Masika 2002; Chindarkar 2012; Gioli and Milan 2018). This book's findings already suggest that gender relations and its importance for understanding environmental migration and the development of migration aspirations should be studied within the local economic context and over time. More specifically, gender roles and gendered divisions of tasks with regard to land use matter when examining the vulnerabilities of people confronted with environmental change as well as their ability to migrate. More gender-sensitive analyses are, however, needed to disentangle gender, migration aspirations, and environmental change.

Sixth, building further on one of the previous methodological remarks, efforts should be made to focus on *immobile groups*, which in the Moroccan context are

often identified as elderly females and poorer, vulnerable groups. Since it seems hard to imagine and aspire to migrate when you are aware of your social and financial constraints, future research should apply an intergenerational family approach to the study of (environmental) migrant aspirations. By focusing on different generations, greater insight can be derived in how migration aspirations can be passed through generations and the motivations behind such parental aspirations (e.g., in terms of the household family income or applied adaptation strategies to deal with environmental change).

Seventh, more research should consider the *views on nature and the relationship with humans* when discussing all aspects related to environmental changes. The strategies people develop when dealing with environmental changes are shaped by such views. Climate change discourses seem to be insufficiently applied to people's immediate living environment and therefore people do not seem to link these discourses to their own situation. Hence, knowledge on climate change discourses does not necessarily result in the development of strategies to adapt to environmental change. These discourses need to be injected with tacit knowledge and skills from people living in gradually-degrading living environments and, for instance, working in agriculture or in fields more heavily affected by environmental change. Interestingly, these views and this type of knowledge and skills are hardly considered in policies concerning environmental changes (e.g. Bremer et al. 2017; IPCC 2014). This would add to a better understanding of the importance of the social, cultural, and religious context, as well as the importance of the specificity of the environmental changes for the development of climate change discourses and perceptions concerning environmental changes, their impact, and how to adapt to them. These studies could draw inspiration from fields of study such as sociology of risk, disaster studies, and so on.

Furthermore, more in-depth research should be done regarding the references that respondents make to the content of local religious and cultural beliefs concerning this topic. When looking at the importance of *religion* while discussing these views on environmental change and the role of people herein in the Moroccan context, the multidimensionality of religion needs to be assessed as well (Glock and Stark 1965; Cornwall et al. 1986; Hill and Hood 1999). More research is needed on how personal and institutional dimensions of religiosity impact people's vulnerabilities, resilience, and views on environmental change, and how this impacts the development of (additional) adaptation strategies for dealing with environmental changes in their immediate environment. These dimensions of religiosity could refer to beliefs, behaviours, and commitment at both the institutional and personal levels (Cornwall et al. 1986). Consequently, religiosity could be related to environmental change in many ways. When being applied to Islam, the most common religion in the Moroccan context, there are many verses in the Quran explaining that mankind should take care of the environment, protect it against climate change, and prevent overconsumption of its resources. Although already in 2015 the Islamic Climate Change Symposium had adopted the Islamic Declaration on Global Climate Change, hardly any attention was given to religious, Islamic views on nature protection in other policies to reduce climate change (e.g, IPCC reports), nor did scholars include

Islamic views on climate change in their studies. Finally, in the Moroccan context, it would be interesting to examine in a more systematic way how this varies across Arab and Amazigh cultures and regions within Morocco (cf. Chaps. 3 and 5).

Eighth, future studies could systematically map out the *effective remittance flows between migrant networks and their regions of origin* to explicitly study how these remittances are on a large scale used to deal with environmental changes or not. Remittances could also have a very negative effect on the region of origin due to the lack of investment in adaptation strategies to deal with environmental changes and the disconnection between the educational and professional aspirations of people living in a particular region from the economic and social conditions as well as opportunities in that region. As shown from our results, migration could be used as an individual adaptation strategy to deal with environmental change. Nevertheless, when making migration work for a larger community or society, more coordinated action is necessary, and evaluation research on these actions is highly needed. By systematically evaluating adaptation strategies used to cope with the effects of environmental change, all aspects related to migration are incorporated and a better overview of the combined advantages and disadvantages could be provided. It is important here is to study the combined effect of different adaptation strategies together.

A ninth future research recommendation is to connect the accounts of potential migrants in a network approach with their migrant relatives in order to map the information streams and analyse the *importance of social capital for the development and applications of climate change discourses* (Smith et al. 2012) as well as the sending of *remittances* and other resources. Furthermore, additional research is needed to study how the importance of these networks varies by comparing different settings, contexts, countries (cf. Bryan et al. 2009), and continents.

## 9.3 Conclusions

The distinct chapters of this book highlight how environmental changes and migration dynamics interplay within the Moroccan context, and more specifically in Tangier and Tinghir, as well as for people of the Moroccan diaspora in Belgium. This comparative and complementary case study approach focuses mainly on how environmental changes are felt through the existing social structures – gender relations in families and society, distinct socio-economic vulnerabilities and resilience in society related to educational level, professions and dependence on the natural living environment, and the added advantages of having access to all kinds of remittances from migrant networks. The use of this regional approach helps to examine how societal structures are crucial for a better understanding of the potential migration dynamics triggered by environmental changes. More importantly, the book's findings demonstrate how the existing migration networks – in some cases – impact how local governments and inhabitants deal with, and adapt to, the changing natural (and social) living environment. The mutual influences of both

migration and environmental factors is often insufficiently considered in previous theories on environmental migration (cf. 'migration-as-adaptation discourse', Gemenne 2010; Gemenne and Blocher 2016) and when developing theoretical frameworks that attempt to grasp the determinants of environmental migration (cf. the Foresight report, TGOFS 2011). By building further on existing insights in migration theories and applying them to the study of environmental migration within Morocco and from Morocco to Belgium, this book aims to demonstrate how regional specifications of local dynamics and structures as well as transnational migrant networks and systems need to be studied together in order to understand environmental migration and displacement. These local structures and migrant networks are part of the adaptive capacity of individuals and regions in general.

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