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Abstract

This chapter is based on qualitative focus group and in-depth interview data collected among rural residents and urban migrants in the five focus countries for this study. The chapter documents the relationship between climate change and internal human mobility as seen by the population, as well as some of the other adaptation strategies used by households to cope with a deteriorating climate. Rural residents are clearly aware of climate change. They perceive a shift in climactic conditions that affects their livelihood due to deteriorating agricultural conditions. Among households affected by climate change, migration appears to be more of a strategy of last resort than of first resort, although there are exceptions. For those who migrate to urban areas, obtaining a job as well as a proper dwelling is hard and further hindered by corruption and competition for limited employment opportunities. The obligation to send remittances also puts pressure on migrants. Yet, despite difficulties and pressures, the perceived benefits of migration in terms of the independence and opportunities afforded by urban life remain substantial.

1. Introduction

The MENA region is experiencing warmer temperatures and precipitation levels are falling. Adverse extreme weather events are expected to increase in frequency and severity in coming decades. As a result of its impact on the environment, climate change has significant effects on economic outcomes. In many MENA countries – including those that are the focus of this study – economic growth and poverty levels are strongly influenced by agriculture and agricultural-related activity. For example, about three fourths of Morocco's poor depend on agriculture for their livelihood. This population lives on land with poor agricultural potential which is sensitive to changes in rainfall. While agriculture in Morocco represents only one seventh of GDP, it employs almost half of the labor force.

A similar pattern is evident in Yemen, where agriculture accounts for a similar share of GDP and employs 55 percent of the labor force. In Egypt also, agriculture represents only one seventh of GDP, but it employs 55 percent of the labor force. In Syria, 45 percent of the population works in agriculture, and the country is on the verge of water poverty, against the backdrop of declining rainfall and a decline in the availability of agricultural land as well as rising temperatures (MSEA 2010, Qabbani 2010, and el Atrache 2009). Such trends are evident throughout the MENA region where it is estimated that overall, 80 to 100 million people may experience water stress by 2025 (Warren et al., 2006). By 2050 water availability per capita is expected to decline by 50 percent versus current levels and declining precipitation is likely to reduce further the availability of agricultural land and its productivity, thereby endangering the livelihood of millions of households (UNDP 2009)[1].

As vulnerable rural populations attempt to cope with new and challenging circumstances, various strategies are at their disposal. Individuals or households may eat less, sell assets, remove children from school, or they may migrate as one of a number of strategic choices. Migration is indeed a common means of dealing with risks from the environment. But the extent to which climate change affects migration is unclear, because migration is affected by multiple push and pull factors. Push factors do include changes in the climate such as warming temperatures, heat waves, declining rainfall, and also floods, among others. These events act as catalysts for migration from rural to urban areas or to other countries, whether temporarily or permanently. This is because climate and subsequent environmental degradation decrease agricultural crop production, as well as livestock or water availability, which adversely affects economic activity. But pull factors that may have nothing to do with climate change also influence migration. The existence of economic opportunities such as employment, well-established community networks that help reduce uncertainty and risk, and housing in urban areas may all be variables that pull migrants to a particular area independently of changes in the climate. The possibility of better access to schools, health care, electricity, and possibly clean water and functioning sewage systems in urban areas also influences the decisions of some migrants to leave.

[1] Aside from its economic impacts, climate change is also associated with local conflict (Reuveny 2007; Nordas and Gleditsch 2007), although there is some debate on this. The argument for which there is some evidence is that the effects of climate change have been associated with tension among communities as groups compete for access to scarce natural resources such as land and water. Climate change also presents unique challenges to women in particular. MENA migrants, whether internal or external, tend to be overwhelmingly male. This means that women are left to assume the burden of increased workload at the place of origin and may also be isolated to the extent that many rural institutions are male-dominated, thus making it difficult for women to have access to them – particularly those that center on decision-making. For women who may have migrated, they may be more likely to be denied better job opportunities compared to their male counterparts, and they may not have to same social outlets as males in urban areas which impacts quality of life.

There is unfortunately a dearth of rigorous analysis on climate change and migration to better understand the impact of climate change on human mobility in the MENA region. This is not only the case for quantitative analysis, but also for qualitative analysis. For a brief review of the literature which informs this chapter, see the introduction of chapter 2 by Wodon et al. (2014) and chapter 3 on the five countries of focus for this work by Burger et al. (2014a) in this study.

As a complement to the quantitative analysis conducted in other chapters, the goal of this chapter is to contribute to a more in-depth or "thicker" understanding of the complex relationships between climate change, environmental degradation, and migration than is feasible through statistics and (reduced form) econometric analysis. The chapter seeks to illustrate the precarious conditions rural communities face as a result of climate-induced environmental degradation, identify why potential migrants select – or do not select – various adaptation strategies including that of migration, and describe the challenges household members face once they choose to relocate to urban areas.

More precisely, this chapter aims to provide answers to a number of questions, each of which addresses various aspects of the relationship between climate change and migration. Among residents in rural areas, what do respondents see as the greatest challenges facing their households? As households attempt to cope with unfavorable agricultural conditions caused by climate change, how prevalent is migration as an adaptive strategy relative to others? To what extent do economic and social burdens differ across gender? What is the role of remittances for rural household productivity and survival? Among urban migrants, key questions include: For those who have opted for migration as an adaptation strategy, to what extent has integration into urban settings been a positive process or a negative one, and why? How important are community networks for reducing uncertainty, such as for providing information, access to employment opportunities, and for facilitating the overall social and economic integration process? To what extent have the expectations of rural migrants been met? And finally, among rural migrants, what is the likelihood of return to rural places of origin?

In order to explore these themes, focus groups and semi-structured in-depth interviews were conducted among both rural residents and urban migrants in the five focus countries – Morocco, Egypt and Syria, Algeria and Yemen (on data collection and the choice of focus countries, see Burger et al., 2014a, 2014b). The participants in focus groups and the individuals who were interviewed were asked about their perceptions of climate change, and their individual views of household circumstances and other factors that shape migration choices and other adaptation strategies. Each of the five countries is subject to climate change and environmental degradation, but not to the same extent. Given variance in historic experiences, domestic institutions, and climate pressures, one would expect that individual attitudes and responses would differ between areas and countries. To some extent, this indeed turned out to be the case, and yet there were many similarities in the experiences shared across countries.

The chapter is structured as follows. Section 2 outlines the reasons for conducting qualitative work as part of this study and the approach used here through focus groups, semi-structured in-depth interviews, and interviews with key informants. Section 3 discusses the findings for sending rural areas. Section 4 does the same for receiving urban areas. Section 5 is touches upon the correspondence between the qualitative results presented in this chapter and some of the results obtained using household surveys in other chapters. Section 6 summarizes some of findings from the interviews with key informants. A brief conclusion follows.

2. Rationale for Qualitative Work and Methodology

While this study relies mostly on quantitative survey data, it also factors in through this chapter qualitative fieldwork. The combination of quantitative and qualitative data is important and warranted by the nature of some of the questions being analyzed. Before presenting the qualitative data sources, it is useful to briefly outline some of the reasons that have led to the decision to combine quantitative and qualitative data sources for this study.

Survey-based and other quantitative methods have long been privileged in the development economics and environmental science literature because of the higher degree of statistical reliability of such data. But qualitative research tools have also proved to be important to identify social issues, assess stakeholder interests and interactions, and identify the many different transmission channels through which exogenous shocks as well as policy interventions may have an impact on individuals and groups. That is, qualitative research and findings have often been found essential to complement the traditional focus on quantitative analysis.

Quantitative methods based on statistics provide robustness to the results if they rely on appropriate samples, and regression analysis helps to control for a large number of other variables when measuring the impact of a specific variable on a given outcome. Yet quantitative data often cannot fully capture causality, especially when the analysis fails to provide appropriate contextual information. Qualitative methods help to shed light on why people make the decisions they do. Qualitative research is often people-centered, and it may include both objective and subjective dimensions, to the degree that it considers both objective conditions for people's lives and their perceptions and feelings about their situation. While this can also be done to some extent with quantitative data, qualitative data often provides a richer context for interpretation.

An important aspect of qualitative research methods refers to what scholars call research access. While no hasty conclusions should be made about the advantages of qualitative research techniques (respondents may refuse to be interviewed while they may accept to fill in an anonymous questionnaire), such methods are often better suited to address sensitive issues. One example in the case of this study relates to women's perceptions of the implications of climate change and migration. In the quantitative survey data collection, in part because of cost constraints, only one person was interviewed in each household, and this was typically the (male) household head. In the focus groups and in-depth interviews, care was taken to interview both men and women, which provides for a better understanding of the point of view of women on climate change and migration issues. This is important given that in the region, migration remains primarily undertaken by men, who may have a different view of its benefits and costs than women. Also, the challenges faced by those women who have migrated need not be the same as those faced by men – the risk of sexual and other forms of harassment is for example much higher for women than it is for men, but the social as opposed to economic opportunities that migration may provide in terms of gaining more freedom is likely to be higher for women.

Another argument in favor of integrated research methods relates to the potential of complementing quantitative data with actor-oriented perspectives in applied research. An actor-oriented perspective entails the variety of social practices and at times incompatible worldviews between various actors and the multiple realities to which these practices and worldviews respond. In the case of research on climate change and service delivery, key actors would include not only the household members who migrate and those who do not, but also the governmental officials and nongovernmental experts who implement policies and programs in this area. The experience and voice of those affected by climate change as well as the perspective of professionals are often overlooked when relying only on quantitative survey data.

Still another argument in favor of integrated research methods relates to policy making. Qualitative data derived from interviews and focus groups are often criticized for their subjectivity. This is a legitimate concern, and it underscores the fact that qualitative research methods must be implemented rigorously by well-trained researchers, with their results ideally supported by further quantitative analysis. But at the same time, policy-oriented social analysis is concerned with change and agency. In such contexts, the subjectivity of the various actors, and how as persons they perceive their situations matters for understanding the basis of agency.

The qualitative fieldwork for this specific study is especially important because it is the only information available in the study on how well migrants are doing in urban areas. This is because the survey data collection and most of the analysis conducted for the study focused by design on rural sending areas. But assessing through qualitative fieldwork how well migrants are doing is crucial to understand what is going on in sending areas, since outcomes for migrants affect through their ability to send remittances how well households are doing back home.

For example, part of this study suggests that remittances tend to be received less (in probability and in amounts) by households living in climate poor areas, even if though remittances received in those areas are even more crucial than elsewhere to reduce poverty and improve human development indicators. This chapter helps to understand why remittances do not always reach climate poor areas. This is probably in part because many urban migrants from those areas have a hard time finding good jobs, so that even if they consider it their moral obligation to send remittances back home, they may not always able to do so. Furthermore, this migration appears to be a strategy of last resort in the areas most affected by droughts and a deteriorating climate, which may also help to explain why households living in those areas are less likely to receive remittances. This could appear counter-intuitive. Given that opportunities are scarce in the areas most affected by the changing climate, one would expect high rates of migration away from those areas. Yet once the social context is taken into account, it becomes clear that migration is not necessarily the first choice of migrants in those areas because they have strong personal links with their area of origin that many do not wish to lose through migration (this is however highly context specific and varies between countries).

In this chapter, the qualitative findings that are discussed are based on results from focus groups semi-structured in-depth interviews, and interviews with key informants. A general description of the methodology used for the qualitative analysis is provided in chapter 4 (Burger et al., 2014a). Additional details are given in this section and especially in annexes 1 through 3 to this chapter. On focus groups, the original intent was to conduct them in the five countries. But lack of security in Yemen made focus group recruitment difficult, and in Algeria focus group recruitment was hampered by local suspicion. In both countries, this led to a shift towards semi-structured in-depth interviews which provide similarly rich and textured information. The fieldwork was conducted among adults 18 years of age and older in each country between November 2010 and February 2012. Results are based on seven focus groups in Morocco, Egypt, and Syria, with each group comprised of six to eight participants: four focus groups among urban migrants, who have relocated internally from rural areas; and three focus groups in each rural area among rural residents. In Algeria and Yemen, as already mentioned, semi-structured interviews were conducted instead. The rural areas for the qualitative work were selected among the sites used for the household survey data collection: M'Sila in Algeria, Lamzoudia in Morocco, Dakhalia in Egypt, al-Hassakeh in Syria, and Hudaydah in Yemen. The urban areas were the countries' largest, most populous cities: Algiers, Casablanca, Cairo, Damascus, and Sanaa. Table 1 summarizes the location of the qualitative research sites.

Table 1: Qualitative Research Sites for Focus Groups and In-depth Interviews

	Morocco	Algeria*	Egypt	Syria	Yemen*
Urban (4)	Casablanca	Algiers	Cairo	Damascus	Sanaa
Rural (3)	Lamzoudia	Djelfa	Dakhalia	al Hassakeh	Hudaydah

Source: Authors. *Semi-structured in-depth interviews

It was suggested earlier that a key contribution of this chapter to the overall study consists in documenting the living conditions of migrants in urban areas. To what extent is the choice of the cities in table 1 appropriate for conducting the focus groups and in-depth interviews? Is it correct to implicitly assume through the choice of these sites for the fieldwork that most migration is towards urban areas, and specifically towards large urban centers, so that the choice of these cities would be appropriate? Table 2 provides data from the household surveys collected in the five countries in mostly rural areas affected by adverse weather shocks. Those are the data used in several other chapters of the study (chapters 5, 7, and 9). While those data are not nationally representative, they are representative, or at least illustrative of the weather and migration patterns in some of the areas most affected by climate change

In table 2 non-resident migration refers to permanent migration by household members who used to belong to the household but have left. Resident migration by contrast is temporary, in that the migrant is still considered by the household as being part of the household in the areas of origin. Table 2 suggests that for four of the five countries (due to data issues this analysis cannot be performed for Algeria), both temporary and permanent migration takes place towards urban areas, especially in the case of non-residents. In addition, for non-residents the survey questionnaire identifies separately small urban areas and large cities, and clearly migration is taking place mostly towards those large urban centers. Given that the focus in this chapter is on permanent migrants, conducting the interviews in the cities listed table 1 seems appropriate.

Table 2: Types of Migration by Area of Destination – Individual Level (%)

	Residents (temporary migration)		Non-residents (permanent migration)		
	Rural	Urban	Rural	Small urban area	Large city
All	34.64	65.36	20.62	8.28	71.10
Country					
Egypt	10.63	89.38	16.47	11.76	71.76
Morocco	4.69	95.31	12.71	5.37	81.93
Syria	76.58	23.42	27.86	11.02	61.12
Yemen	8.47	91.53	19.89	3.23	76.88
Quintiles					
Q1	40.02	59.98	19.16	10.05	70.79
Q2	39.89	60.11	26.61	10.65	62.75
Q3	29.52	70.48	25.92	5.81	68.27
Q4	27.83	72.17	11.26	7.86	80.89
Q5	27.56	72.44	18.96	6.33	74.70

Source: Authors' estimation.

Discussions in focus groups and in-depth interviews in urban areas were organized around core questions, with probing for specific aspects or sub-questions within each of the main question. The same was done in rural areas, but with a different set of questions. Annexes 1 and 2 provide the list of questions used in urban and rural areas, as well as the sub-topics on which the focus group leaders and the interviewers (for in-depth interviews) probed participants. In addition, key informant interviews were carried with a dozen government officials and a dozen

respondents from universities, international organizations, and NGOs in each country. The main questions asked to government officials and non-governmental experts are listed in Annex 3.

To understand who participated in the urban focus groups and in-depth interviews, it is important to note that filters were used for the selection of participants. If a migrant came from another urban area, or if s/he had relocated to the present area more than 10 years ago, s/he was not selected in the sample. Only migrants who had relocated because they could not earn a living in rural areas due to poor agricultural conditions or because they needed to migrate to work and help their family were included in the sample. Those who said that they migrated because they were tired of their area of origin, because they needed to migrate to go to school or because they missed friends and family relatives who had moved to their urban area were not selected.

In addition to focus groups and in-depth household interviews where the focus groups could not be implemented, we also relied on interviews with key informants. This is because the ability of countries to adapt – and help affected populations adapt – to climate change depends in part on governance and institutional capacity (Sowers and Weinthal 2010). In order to assess this capacity and the extent to which issues related to climate change and migration were present in the policy and development agenda, interviews were carried with key informants – government officials and nongovernmental experts – in each of the five countries. For the purpose of understanding the decisions to migrate of household members and the consequences, both positive and negative, of such decisions for both migrants and the household back home, the information obtained from key informants was not the most valuable. But that information does help in placing climate-induced migration in a broader context. For that reason, we also report as an example the feedback received from key informants in the specific case of Morocco, because for that country key informants were especially knowledgeable about migration flows.

3. Focus Groups and In-depth Interviews in Rural (Sending) Areas

Focus group respondents were aware of the shifts taking place in the climate and attribute associated declining agriculture fortunes with deteriorating environmental conditions caused by changing weather patterns. Conditions in rural or "sending areas" have become very difficult, according to the vast majority of focus group respondents. Participants complained of fewer days of rainfall and lower irrigation levels. For key crops such as potatoes, wheat, and rice, the results are devastating. *"Rice is burnt in some seasons, because we cannot find enough water to irrigate it"* (Male, 36-45 years old, Dakhalia). Egyptians, in particular, also cited government expropriation of agricultural land as an obstacle to profitable and sustainable agriculture, though this problem was not mentioned in other countries. Many former rural residents from each country also mentioned the rising costs of seeds and other agricultural inputs. Rural residents explained that poor quality of crops mean lower prices for agricultural products and this reduces income. While incomes from agricultural activity are decreasing, the prices for essential goods are on the rise, observed most participants. The inability to earn a stable and adequate income from crops implies that relying solely on agricultural activity is not feasible any more. The experience shared in Box 1 from a resident in the town of Djelfa in Algeria is one shared by many other focus group participants and respondents in the in-depth interviews.

Box 1: Testimony from a Rural Respondent in Algeria

Well, the conditions [for] farming are very poor. There's drought on the one hand and the unavailability of the new equipment and poor methods we use on the other hand. Of course, this is the main problem in our life. Our life here depends on the rain, and if there is no rain, how could we survive? The rain is the main source of life here. …The impact of poor weather conditions on my farm was disastrous to my farm's yields. My income from cereals and vegetables is not enough to feed my household. As I mentioned, the income [has] decreased to its minimum, and I cannot regain the cost of farming over the last two years. All farmers in this region have been affected by the drought and lost their yields (Male, 35-45 years old).

Rural residents have no choice but to rely on multiple sources of income because without such additional income sources, households cannot sustain themselves. One Egyptian woman explained that poor prices turn farmers away from agriculture altogether: *"They [farmers] used to exert earnest effort in the past because the gains were equally profitable, but now it is of no use. Land [requires] a lot of money and the earnings then have to be distributed among many in the family"* (Female, 25-35 years old, Cairo, Egypt). Or as a Syrian man put it: *"When the al-Kabour river was flowing, there was a labor force here and people were able to cultivate their lands, but now…"* (Male, 25-45 years old, al-Hasaka, Syria). Traveling long distances between homes and jobs is cumbersome – and expensive, with a number of respondents from all five countries expressing frustration about the expense of transportation and lack of good roads.

In Yemen, almost every rural resident from the area of Hudaydah emphasized the severity of the warm weather and increasing heat waves. Electricity that allows for cooling functions only two to three hours per day, causing residents to lose sleep during the evening due to excessive heat. Residents, therefore, tend to sleep during the day because of exhaustion. As a result, fewer daytime hours are dedicated to work and income generation. Furthermore, Yemeni respondents explained that agricultural productivity is further complicated by lack of governance and neglect of the agricultural sector, ineffective government policies, and corruption. Unfavorable crop prices and pressures to generate income amid extreme rural poverty have caused growers to shift away from agricultural food crops in favor of qat production which is far more profitable: *"…People there [in villages] work shoulder to shoulder, but the problem lies in agriculture. They have stopped cultivating crops and coffee beans and replaced them with qat, which now [dominates] agricultural lands. And we note that there are more than 300 qat vendors in the single market. How much do they add up to in the overall Republic? …Tomatoes, now, are now non-existent, and it is essential now that we important them from Syria"* (Male, 30-39 years old, Sanaa, Yemen). But qat requires a great deal of water, and Yemeni respondents noted with worry that water scarcity has led to conflicts over access to wells. As a way to cope with water scarcity, a Yemeni woman from Hudaydah described a complicated water distribution scheme where water is distributed to certain communities on certain days of the week.

For farmers in all five countries, the burden of living in impoverished rural areas is not just one of financial cost, but also one of poor health, a concern mentioned frequently by Egyptian rural focus group respondents. For example, some pointed out that farmers are being increasingly exposed to contaminated water because waste leaks into irrigation canals. Other Egyptian participants mentioned being sick due to illnesses such as the flu. With only limited income at their disposal, many Egyptian respondents said that their households cannot afford quality health care or cannot access health facilities because they are not in close proximity.

The fieldwork suggested that coping strategies are multifaceted among rural households. Common coping mechanisms include selling assets, removing children from school so they can work to support the household, and shifting food consumption habits such as eating less chicken or beef or eating one less meal. Most respondents report having had to employ one or more of these mechanisms to cope with the negative impact of climate change on agricultural production. Borrowing food or money from the community is also an important survival m in times of economic stress. Women, in particular, are also mindful of the impact of income losses on their ability to help their children get married: *"It affects everything. My husband passed away and my monthly income is 60 or 90 EGP, i.e. nothing. Sometimes I refuse a suitor of my daughter because I cannot afford getting her married"* (Female, 36-45 years old, Dakhalia, Egypt).

Rural respondents also stated that on the whole there is only limited or no involvement of local organizations in their communities, including non-governmental organizations. In the absence of such organizations to provide advice and assistance and help mitigate the impact of climate change on agriculture, rural residents rely on each other. As a rural Egyptian man explained: *"Rural residents are willing to pay [give] half of what we have to help others. If I have 10 pounds [Egyptian pounds], I will pay 5. If I have 100 pounds, I will pay 50. This is how the social norms work here. We are all one family"* (Male, 36-45 years old, Dakhalia, Egypt).

With rural poverty levels high and prospects of substantially improving incomes low, remittances are essential for daily survival. They can be used to purchase durable goods, food, clothes, health care, land, and housing but they can also be used to invest in businesses. Remittances are vital as they may contribute to the health of both household and national economies. Remittances appeared especially important for rural focus group respondents from Yemen, where a number of participants declared having family members who had migrated internationally, primarily to Persian Gulf countries. Saudi Arabia is the most popular destination for Yemeni migrants, and remittances allow those who receive them to enjoy a reasonably high standard of living. In the absence of remittances, live is much harder: *"My brother is in Saudi Arabia. He used to send me money all of the time and we were well off, even when I wasn't working. [But] we lost the house and everything we [owned] because of the discontinuity of these aids. We live at God's mercy"* (Male, 30-45 years old, Hudaydah, Yemen). By contrast, participants from Morocco and Algeria did not appear to depend as much on remittances, and only a few mentioned that they receive remittances from relatives. Across all focus groups, no one referred to seeking solace or assistance from mosques and respondents were united in their reprehension towards using children to peddle, saying emphatically that it is never unacceptable.

When asked if they were aware of government or non-governmental programs addressing climate change in their communities or helping to alleviate its social and economic impact, many respondents stated that they were not aware of such programs. But there were some exceptions. A few Yemeni residents mentioned the Saleh Organization, but concluded that it only provided temporary help or relief. Rural Algerians were aware of forms of government assistance for the agricultural sector, referring to low interest loans and government provision of advisors who travel to villages to help teach growing methods. However, the impact of the advisors appeared uneven. More isolated locales are far from their reach, and on the main, bureaucracy and corruption make loan acquisition from formal institutions such as banks a lengthy and frustrating process. So much so that many farmers said they avoid this option altogether.

Rural participants in the fieldwork suggested a number of government initiatives that could help farmers better adapt to their changing environment and could help blunt the economic impact of decreasing agriculture. Table 3 summarizes commonly mentioned recommendations for government assistance among respondents. In addition, Egyptian respondents mentioned the

importance of strengthening agricultural unions. In one focus group, rural participants recalled that in the past agricultural unions were stronger and benefitted from linkages to the Egyptian parliament, and therefore were in a much better position to serve agricultural interests.

Table 3: Selected Suggestions by Participants for Government Assistance in Rural Areas

Job training for rural populations, including job-appropriate training for women
Improvements in infrastructure (clinics, schools, roads, electricity, clean water, transportation, sewage systems)
Doctors and nurses
Transportation for children, especially so that girls can go to school
Low interest loans and credits for agricultural inputs
Strengthening or creating agricultural unions and organizations so they can better serve farmer interests
Improved access to water via removing dams and/or building wells
Encourage investment in rural businesses and industries
Addressing corruption

Source: Authors.

Government provision of agricultural inputs such as seeds and fertilizers was also suggested in addition to the provision of loans to purchase machinery or for livestock breeding. However, participants were less sanguine about whether any real changes would actually materialize. Pervasive local and national-level corruption and patronage were seen as major obstacles to progress in the countryside: *"We need machinery that would help us collect rice ashes instead of burning it and to press wood automatically. Livestock breeding … are also projects that are of low cost to the government"* (Male 36-45 years old, Dakhalia, Egypt).

Syrians in al-Hassakeh recommended removing the dam at the al-Kabhour river to allow greater access to water for the population, in addition to encouraging the government to keep its promises to improve rural infrastructure. Assistance with navigating the process to obtain loans was also requested. Job training and improved employment opportunities for both rural men and women were mentioned as helpful in all five countries. Men and women said that although local norms may frown upon women working, particularly in public spaces typically reserved for men, training and employment that is discreet and can be done in or near the household would be welcomed by men and women. In contrast to respondents from the other countries, Moroccan participants were virtually unanimous in objecting to rural women working in positions deemed unacceptable according to community norms (e.g., sales and teaching), since this is considered shameful. Some Yemenis were doubtful that any government program would bear fruit, citing corruption and distrust of Yemeni institutions as the reason for their lack of confidence.

4. Focus Groups and In-depth Interviews in Urban (Receiving) Areas

Most migrants who participated in the focus groups and in-depth interviews came from households that depend on rain-fed agriculture for their livelihood. The typical profile is a man aged between 25 and 45. The majority of female participants relocated to urban areas to follow their husbands. Younger women between the ages of 18 to 25 are unmarried and migrated to the cities to work in order to support their families back home. All female participants had a relative or close family friend who already lived in the city and they arrived accompanied by a relative.

Why migration? Many respondents said that they migrated from their rural homes because chronic droughts caused a decline in agricultural productivity. Few mentioned floods or being displaced as a result of natural disasters as the reason for their relocation. *"There is lack of water has resulted in a failure to be able to cultivate rice and it is an important crop"* (Male, 25-35 years old, Dakhalia, Egypt). Married urban female migrants recalled having to increase their

workload prior to migrating to cities. A woman who resettled in Cairo explained that women in her village have to help their husbands because it has become too expensive to hire cheap agricultural workers: *"We used to help our husbands during harvest collection instead of getting people to do this against a sum of money. Life was difficult there [in the village], so we decided to come here to Cairo as it is more comfortable"* (Female, 25-35 years old, Cairo, Egypt).

A finding consistent across all five countries was that many (but by no means all) respondents appeared to have chosen migration as an adaptation strategy of last resort after other strategies proved unsuccessful. Many migrants described a life before they migrated of hardship and precariousness accompanied by a constant lack of food, water, and income for basic needs, education, and employment. In many households, male family members had to leave school in order to work, and many families also had to eat less and forego at least one meal per day. Selling assets was common: *"My father sold mattresses, furniture, and our bed covers. We even sold our last cow during sacrifice. We had nothing"* (Female, 20-25 years old, Casablanca, Morocco). *"My father was a farmer and he could not work anymore. There was no rain, only drought and labor was soon replaced by machines. For example, my mother used to earn income milking cows. She was replaced by machines"* (Male, 18-25 years old, Casablanca, Morocco)[2].

A critical step in the integration process for migrants resettling in urban areas is finding employment. Most rural migrants said that they came to urban areas in search of better job opportunities, either to support their parents or to improve future prospects for themselves and their own family. Jobs commonly held by female migrants include housecleaning, and working as a seamstress. For men, there was more variety, including occupations such as waiter, mason, doorman, gardener, baker, seller of vegetables, fruits, and crafts, factory worker, small shopkeeper, janitor, car parker/attendant, and driver. Many men hope to ultimately save enough to own their own small business, such as a small shop. Finding jobs, however, is not an easy feat amid high unemployment in the region, especially among youths. While some respondents found that urban communities were receptive to their arrival from the countryside, others said that they were met with more hostility, especially in Morocco and Syria, where respondents complained of negative stereotyping and pervasive discrimination from established urban residents, particularly when trying to find viable employment: *"They look at us and call us 'Berber countrymen'. They think we are invaders"* (Male, 18-25 years old, Casablanca, Morocco).

Some rural migrants from Morocco said they felt disadvantaged vis-à-vis their urban counterparts because they lacked a degree and French-and Arabic-speaking capability, features that are needed to secure even the jobs requiring minimal skills: *"When I go look for a job, they ask for a degree and French – this is for hairdressing, sewing or couture"* (Female, 20-25 years old, Casablanca). Syrian rural migrants, likewise, said that they felt inferior and unwelcome in Damascus. Wherever they went, they felt treated like strangers and "different." This makes finding a job difficult. For Yemenis, the main obstacle to finding a job was corruption, which is

[2] Algeria stood out in that the decision to migrate there was driven primarily by violence wrought by the civil war which ravaged the country from 1992 to 1999, causing some 150,000 deaths. Insurgent violence was widespread in urban areas as well as in the countryside. Older Algerians were more likely to have been impacted by the civil war than younger migrants. A few male respondents pointed to insurgent violence as one of the reasons for their departure from the countryside in addition to the impact of climate change on agriculture: *"I left my village for two reasons. First because of the aggravation of terrorism in Djedjel, and second because of the weather conditions. The terrorists used to threaten our lives, unless we gave them food and assistance. The drought also gave us poor crops and therefore we had no income, so I decided to leave. In fact, I was working in Libya and when I came back home I found the security situation in my village was very dangerous. The terrorists [were] threatening our lives if we do not accept their ideologies, therefore I decided to relocate in Algiers and did not try to do anything there just removed my family from there"* (Male, 35-50 years old, Algiers, Algeria).

deep and pervasive. Corruption was mentioned by Yemenis as a major problem in general far more often than other participants: *"You need to bribe your way into a position. That is your easy way towards a good job position – and we all love the easy way"* (Male, 30-39 years old, Sanaa). Table 4 lists some of the jobs held by respondents (only women indicated occupations of housecleaning and seamstress; the other occupations were dominated by males).

Almost as challenging as finding a job is the challenge of finding a decent place to live. Virtually all participants shared their frustration with the lack of adequate housing. Urbanization has caused a shortage of housing in many cities, and many immigrants live in sub-optimal dwellings. Uncomfortable and overcrowded conditions appear to be the norm for both newly-arrived and more settled migrants: *"I'm 39, married, with five kids and I don't have a flat of my own. I pay 300 Egyptian pounds per month and cannot have a flat. Why don't they grant me one? They say you have to rent for just one year, and then it all depends on the owner"* (Male, 36-45 years old, Cairo, Egypt). *"We live on top of each other. There's no privacy. Sometimes you get your money stolen"* (Male, 18-25 Casablanca, Morocco). Algerian rural migrants often live in slums that have poor services and inadequate infrastructure. Expert interviews indicate that Ben Messous, Diar Echam, and Oued Keriche are popular areas for rural immigrants relocating to the city. *"The condition of my house or slum is very bad. In winter the rain comes through the ceiling, and it is very cold, (no central heating) and in the summer it is very hot because I have no air conditioning. To be honest, my slum is not even suitable to house animals"* (Male, 25-35 years old, Algiers, Algeria). For Yemenis, the specter of corruption is again a problem, as a resident of Sana'a who wanted to construct a home explained (see Box 2).

Box 2: Testimony from an Urban Respondent in Yemen

The house is owned but the problem is that you either build or take a random permit. Permits cost up to 60 thousand riyals of which 20-30 thousand are bribes. And paper-work takes two to three weeks, and if we don't pay the bribe they would complicate and even create problems because the Yemeni people have become accustomed to bribery. One loses the sense of this duty due to the fact that his job is underpaid and he does not consider taking another one since he allots his afternoons to qat consumption" (Males focus group, age 35-45)

Migrant community networks in urban areas are critical for acquiring information about available jobs and housing for new migrants. Such networks make certain areas more attractive than others, and they facilitate the transition for migrants. Established communities often share a lineage, tribe, birthplace, or ethnic background. Relatives or family friend are key intermediaries for finding a job and a place to live. Social networks are critical for information gathering and for reducing the risks and uncertainty associated with migration. One young Egyptian male migrant attributed his success in finding a job rather quickly to a cousin who had connections with members of the medical community. But another said: *"I had no family relations – and it took me a whole year to get a job"* (Male, 25-35 years old, Cairo, Egypt).

Even for those with access to a social network, feelings of dislocation were common, and one of the least appealing aspects of relocating to urban areas is the loss of personal interactions with community members, and of the sense of belonging to a community. Many migrants noticed that they now only have limited interactions with their neighbors, if they are fortunate to know them at all, and they also lamented the shift of emphasis on family and traditions. In the words of one Egyptian woman: *"Neighbors are close in the villages. Here [in Cairo], I don't know my neighbors, what their job is or how they live"* (Female, 36-45 years old, Cairo, Egypt).

Crime and harassment also comes with life in the city. Harassment was mentioned especially by female Moroccan respondents who voiced dismay with the unwanted attention they receive from men: *"We are always subject to problems in the street. Men harass us and they say bad words. We fell like strangers here. When they know we are strangers, they treat us worst"* (Female, 25-35 years old, Casablanca, Morocco).

Yet migration also offers opportunities, especially for youths. Young Moroccan respondents expressed a greater sense of independence, belonging, and self-actualization. A married man celebrated his new life, which no longer included working with eight brothers in the countryside. Another said that a friend returned to their village dressed in a suit and he immediately wanted to be like him. For other young former rural dwellers, relocating, while challenging, was still a chance to realize one's potential: *"I want to have a secure job, to be able travel, be able to see other places, other people. …to live my life!"* (Male, 20-25, Casablanca, Morocco). Moving to the city may also be emancipating. Some Moroccan women noticed that since they migrated, they have little desire to get married and have children right away. One said that she escaped a life of near-servitude. Another explained that she left her rural home to escape an arranged marriage. Compared to life in the rural sector, the ability to work in the city also offers more autonomy for women: *"I could work, get married, have babies and have a husband who will beat me up. Marriage age in my [rural] area is 18 to 19 years old. I've worked like a slave in others' homes. No more. I wanted to come to Casablanca to live, work and maybe get married"* (Female, 20-25 years old Casablanca, Morocco). These various views among both men and women were however much more prevalent in Morocco than in the other four countries.

Given both the challenges and opportunities of urban life, views are mixed on whether or not migrants would like to return to their rural homes. Men were far more likely than women to say they will someday return to their rural homes, preferably as more prosperous individuals. Although cities offer a wider range of opportunities for migrants and their children, migrants, and especially men did miss the stronger sense of community in rural areas. Women, by contrast, appeared to appreciate more the distance from their families, for the reasons mentioned above.

Finally, remittances figured prominently in the resource allocations of migrants. In Egypt items such as ghee, oil, bread, flour and sugar are purchased for families in addition to funds being sent directly to homes. In all countries, the amounts sent back vary with the level and stability of the migrants' incomes. Male respondents tended to remit more than females. But for most migrants, male and female, sending remittances to their family was without doubt a moral obligation: *"They [our families] are in a terrible situation. Sometimes they call us to send money each month. Sometimes, I go without dinner or not spend much needed money on myself so I can send money to my family. Without money, they cannot eat. They would have no money for the souk to get food to eat"* (Female, 20-25 years old, Casablanca, Morocco).

While most urban migrants reported sending remittances to their family in rural areas, some Yemeni urban respondents stated that they received remittances from family members working abroad, especially in Saudi Arabia. For many rural and urban Yemeni households alike, international remittances appeared critical to household survival. *"We do not rely on jobs. My mother is a government employee she gets paid 60 thousand riyals which does not cover expenses for seven days, but we rely on the income that comes from the my father who works abroad in Saudi Arabia"* (Male, 30-39 years old, Sanaa, Yemen). *"My brothers work in Saudi Arabia to provide good living for themselves and their families here in Yemen. They send me money when I need it because my work is not enough for me and my family. …wages in Saudi Arabia are good and he works one job which is sufficient for him and his family living in Yemen. We rely upon them a great deal. Employment outside Yemen is available in addition to the*

currency difference. If the surplus is sent to us, it is better than a month's salary here. If it weren't for them we would have nothing to eat" (Male, 25-30 years old, Sanaa, Yemen).

It is also important to note that mobility also involves seasonal migration, especially among men. About a fifth of male focus group respondents declared periodically returning to their rural places of origin. Some travel during holidays and specials occasions, amounting to travel roughly two to three times per year on average. Smaller numbers return to help cultivate land still held by their families or to live part time with their families. Respondents reported that this is very challenging as it costs money to travel and maintain housing in the city: *"I worked for a month or two and kept going back to my village in between. But I wasn't able to save money this way. So, I searched for a place so I could have my family with me and it took me a whole year until I found a suitable room"* (Male, 36-45 years old, Cairo, Egypt).

On balance, views are mixed regarding the degree to which expectations from migration have been met. The primary objective of acquiring sustainable employment is often more difficult than respondents anticipated, particularly for women. Many expected to find a job much sooner than they did. Others, more broadly, expected a more stable and social lifestyle. Many have had a difficult time making friends in the city and overcoming stereotypes. Long work schedules also are obstacles to making friends. Importantly, all would like in the future to have a better education. For Moroccans especially, this means acquiring the ability to speak French or finishing their general education in order to have better paying occupations.

What about the areas where respondents felt that government and nongovernmental programs might help? Access to health care, education and job training, credit for housing and rental assistance were deemed vital among participants for advancing the integration of rural migrants into urban communities. Some suggestions were also more country-specific. In Morocco some respondents complained about not having the appropriate official documents that would enable them to work and receive financial credit: *"Our life is in crisis. When you don't have official documents, what else can you do?"* (Male, 35-45 years old, Casablanca, Morocco). As mentioned earlier, French-speaking capability was also seen as relevant in the Moroccan context for fully functioning in the labor force. The service sector and high-skilled labor sector require French because of significant interaction with French speaking Moroccans or Europeans. While language was not a problem for focus group respondents from the other countries, Moroccan respondents called for government assistance in French language training.

Egyptians emphasized the need for government assistance with agricultural inputs such as seeds and fertilizer, as well as no-interest loans and credit. Yemeni residents had little faith in their institutions to provide assistance: *"I heard about [various programs] and [people] did not get their help because those responsible … are taking the money which they promise to help the citizen with. Also, with institutions of disabled people we hear that they are funded with millions, but the money is being divided in between government officials"* (Male, 25-30 years old, Sanaa, Yemen). Other focus group participants' views were also critical of their governments, but the sentiment was not as widespread and virulent elsewhere as was the case in Yemen. Table 4 summarizes some the areas of focus proposed for government assistance by urban respondents.

Table 4: Selected Suggestions by Participants for Government Assistance in Urban Areas

Improved access to services and urban infrastructure (education, housing stipends, etc.)
Assistance with obtaining proper documents necessary to secure loans, permits, housing, and jobs
Training for learning French (in Morocco)
Addressing corruption (especially in Yemen)

Source: Authors.

5. Heterogeneity between Countries in the Reasons for Migration

A quick read of the discussion in the two previous sections could be perceived as simply highlighting common tendencies in the various countries for both urban and rural areas. There are clearly such common tendencies, but one should not underestimate the heterogeneity in the qualitative data and in the underlying circumstances of individuals and households, including in terms of the reasons for migration and how well migrants fare once they have migrated. These circumstances are highly dependent on the local context. There are not only differences between individuals and households, but also between areas within any country and between countries in the drivers of migration. Depending on the country, migration may or may not be a strategy of last resort, and the decision to migrate may or may not be closely related to droughts and declining agricultural fortunes at their place of origin. The role of pull versus push factors is likely to be different in the various countries given differences in dynamism and opportunities.

The fact that there are differences between areas and countries actually comes up in the qualitative data presented above. On average, migrants in Morocco, and to some extent also in Egypt, tend to mention more frequently the opportunities that migration may offer at the places of destination in terms of jobs and freedom, while migrants in Syria, and to some extent in Algeria and Yemen, are quicker to relate their decision to migrate to the difficulty to survive in rural areas due to the deteriorating climate, droughts, and low agricultural yields. For triangulation of the results from the study, it is reassuring that these stylized differences between countries in the reasons to migrate obtained from the qualitative work also show up in the quantitative data from the household surveys implemented at the same time and in the same sending areas in the five focus countries (see chapter 4 on data collection). In the surveys households could provide two reasons for the migration of household members. Basic statistics on those reasons to migrate are provided in table 5 for permanent (non-resident) migration.

Table 5: Reasons for Permanent Migration, Five Countries Sample, 2011 (%)

		Algeria	Egypt	Morocco	Syria	Yemen	All
	First reason						
(1)	Better employment at destination	12.78	41.76	38.58	41.47	24.06	35.04
(2)	Lack of employment at origin	22.81	20.00	14.23	27.00	14.97	20.68
(3)	To accumulate savings	4.33	11.18	0.00	5.18	8.56	5.09
	Transferred (Job)	0.00	2.35	0.41	0.43	4.81	1.27
	Schooling	0.00	1.76	1.67	1.08	4.81	1.74
	Better infrastructure	3.75	0.00	5.52	1.08	4.28	2.80
	Join family	0.00	2.94	2.23	7.34	5.35	4.38
	Marriage	56.33	11.18	33.31	0.43	18.72	18.92
	Divorce/separation/death of spouse	0.00	0.59	0.00	0.00	0.53	0.16
	Delivery	0.00	0.59	0.00	0.00	0.00	0.08
	Family problems	0.00	2.94	0.57	0.65	5.35	1.55
	Accompany patient	0.00	0.00	0.72	0.00	0.00	0.18
(3)	Escape flood	0.00	0.00	1.91	0.22	0.00	0.55
(4)	Escape drought	0.00	0.00	0.86	14.90	0.00	5.60
	Other	0.00	4.12	0.00	0.22	8.56	1.87
	Missing	0.00	0.59	0.00	0.00	0.00	0.08
	Second reason						
(5)	Better employment at destination	10.50	21.89	23.93	16.41	8.02	16.63
(6)	Lack of employment at origin	3.22	15.98	37.89	41.47	5.35	26.96
(7)	To accumulate savings	22.24	38.46	2.56	14.47	22.99	17.84
	Transferred (Job)	0.00	2.37	5.30	1.51	4.28	2.62
	Schooling	0.00	0.00	1.78	0.43	1.60	0.76
	Better infrastructure	11.90	1.18	6.29	1.30	3.21	3.80
	Join family	4.18	2.96	7.54	0.65	12.30	4.56
	Marriage	9.33	1.78	8.36	0.65	5.88	4.15
	Divorce/separation/death of spouse	0.00	1.18	0.00	0.22	1.60	0.50
	Delivery	0.00	2.96	0.00	0.00	1.60	0.67
	Family problems	0.62	0.59	0.70	1.30	7.49	1.97
	Accompany patient	0.00	0.59	0.00	0.22	1.07	0.34
(8)	Escape flood	0.00	0.59	0.92	0.00	0.00	0.26
(9)	Escape drought	0.00	0.00	3.38	13.17	0.00	5.78
(10)	Poor quality of land or depleted soils	0.00	0.00	1.34	0.22	1.07	0.51
	Violence, conflict or threat of violence	0.00	0.00	0.00	0.00	1.07	0.17
	Other	38.01	1.78	0.00	0.86	22.46	8.61
	Missing	0.00	7.69	0.00	7.13	0.00	3.87
	Ratio and Vulnerability to Droughts						
	Ratio of pull vs. push factors	1.92	3.10	1.08	0.80	2.97	1.24
	Vulnerability to droughts (share of areas)	11.64	2.04	25.30	63.65	14.97	-

Source: Authors. Data on vulnerability to droughts from ACSAD and ISDR (2011).
Note: Ratio of pull vs. push defined as [(1)+(3)+(5)+(7)]/[(2)+(3)+(4)+(6)+(8)+(9)+(10)].

For the sample as a whole, the two main reasons to migrate are the search for better employment opportunities and the lack of employment opportunity in place of origin. Both of these reasons are of course related, but as mentioned in chapter 8, in terms of the language used, the first reason can be associated more with pull factors, while the second can be associated more with push factors. Marriage is also important, especially so in Algeria, but this cannot be related specifically to push or pull factors. Climate and environmental push factors, such as droughts and floods, as well as the poor quality of land or depleted soils are mentioned, but less often, and virtually all mentions of droughts come from Syrian households. Accumulation of savings is another important reason to migrate, and can probably be associated more with pull factors than

with push factors, even if one could discuss this (schooling and better infrastructure also relate more to pull factors, although less in terms of direct employment opportunities and livelihood).

Dividing the share of the main reasons associated with pull factors with the share of the main reasons associated with push factors yields a simple index that can be compared for the various countries. As shown in table 5, the ratio of pull versus push factors is highest in Egypt, where it takes on a value of 3.10. This makes sense given that Egypt is the country the least affected by droughts, with data from a recent study by the Arab Center for the Studies of Arid Zones and Dry Lands and the United Nations Secretariat of the International Strategy for Disaster Reduction Regional Office for Arab States suggesting that only 2.04 percent of the country is vulnerable to droughts (ACSAD and ISDR, 2011). The ratio of pull versus push factors in our household surveys is lowest in Syria, where it takes a value of 0.80, which again makes sense given that Syria is by far the country in our sample the most susceptible to droughts according to the ACSAD-ISDR study (almost two thirds of the country is vulnerable to droughts according to that study), and that it did suffer recently from major droughts that led to substantial displacement. Among the other three countries, Yemen has the largest ratio of pull versus push factors, which may be related to the opportunities provided not only by Sanaa, but also by neighboring Saudi Arabia. And Morocco has the lowest ratio, which corresponds again well to the fact that after Syria, it is among the five focus countries the most susceptible to droughts.

6. Interviews with Key Informants: The Example of Morocco

One more piece of empirical evidence was collected for the qualitative fieldwork through interviews with key informants. In all five countries government officials and nongovernmental experts are well aware of the stress caused by changes in climatic conditions, and of the fact that climate change contributes to rural-urban migration flows even if today it is not the main driver of these flows. They also realize that in most cases, the lack of lack of sufficiently ambitious and well developed policies and programs contributes to the inability to propose concrete solutions and help to those most affected by climate change in rural areas. Many of the comments made by government officials and nongovernmental experts in the various countries were similar, so that rather than provide examples from all countries, it is probably more instructive to cover one country in slightly more depth. This is done in this section for Morocco, because more respondents were either experts on migration or were conducting ongoing research on migration related issues.

Key informants in Morocco explained that migration was historically by men and driven by inequitable development in rural areas. The absence of networks in destination areas made women vulnerable to prostitution or slave labor, so they were less likely to migrate than men. Migrants migrated both internationally and internally, in that case principally to Casablanca, which continues to remain as a prime destination for rural migrants since the Greater Casablanca area alone still attracts around 15 percent of all national migration flows in the country. Today territorial units nearby Casablanca have also become preferred destinations for newcomers. This is for example the case of Ain Sebaa, Sidi Moumen, Moulay Rachid, Hay Hassani, Mohammedia city and districts of Sidi Bernoussi and Hay Mohammadi. Migration to other to cities has also picked up as rural migrants are searching for destinations closer to their homes.

Key informants explained that three main features remain central to migratory flows irrespective of origin and destination locations. The first is the importance of networks which play a critical role in providing support to migrant families and in helping them to decide their destinations. A second key feature is the importance of the remittances sent by migrants, which are critical not only for household survival in rural areas, but also for communities. In Tiznit for

example, migrant associations are helping build two thirds of the roads. Several informants also stated that migration facilitated women empowerment in rural areas, as the women who remained in the countryside while their husbands were away working in the cities gained more independence and were also more likely to interact with their neighbors. A third important feature, especially in recent years, has been the role of climatic patterns in internal migration. Drastic changes in climatic conditions have led to an expansion of shanty towns. In Tafilelt for example, a fourth of the population has migrated due to climatic hazards that had affected agricultural production. Likewise, in the Draa region which has historically been an important center of trade but more recently has been experiencing frequent and longer droughts, out-migration has increased. In general, informants agree that the so-called Oasis belt is losing its population as people are becoming increasingly affected by the negative effects of droughts.

Outgoing migration is primarily stemming from the water crisis that Morocco is experiencing. Six of our respondents mentioned water as a major issue. In part due to more droughts, but also with flooding in some areas. For example the Tafilalt region, one of the most important oasis regions in the country, has suffered from severe droughts and flooding which in turn have undermined the oasis agriculture. While droughts used to occur every four to five years, they now occur every two years. Climatic hazards are also leading to severe desertification in the Sahara region. Rising sea water levels are also a concern, among others in Saadia were tourism may have contributed to destroying plant life and consequently making the land vulnerable. A respondent suggested that 60 percent of Saadi may soon be under water.

These severe climatic conditions have had a large impact on rural populations, with farmers experiencing increased water scarcity with no access to water reserves. Women have to travel much further away to get water. Some respondents were convinced that agricultural yields will fall by 20 percent in 20 years, which drive more migrants from rural areas towards urban centers. Life in the cities will then become difficult for both locals and migrants. Many respondents mentioned ongoing housing and employment crises in urban areas. As locals and migrants compete for survival, integration will become a major problem and economic discrimination will rise, as may black markets and the informal economy. In large cities such as Casablanca, many migrants are already found to be living in shanty towns. The pressures of living in cities along with influences from urban life-styles have also been weakening social structures between migrants and their families which may have severe consequences for those still living in Morocco's rural areas.

In recognition of these challenges, respondents explained that the Moroccan government launched initiatives both at the national and local levels. One such initiative is a higher focus on rural development programs, among others through the Human Development Initiative (HDI) which is designed to target vulnerable populations in both rural and urban areas. At the local level, the government is also conducting awareness programs to inform people about climate change. The objective is to teach people about conservation and preservation of water resources, disaster preparedness to limit the negative effects of droughts, and different irrigation schemes to encourage the agricultural sector to become independent of water resources. Climate change has also been included as a key component in other initiatives such as Morocco Green and the Communal Development Plan. There is also an Energy Strategy Plan being initiated, and work is ongoing towards an insurance plan named 'Natural Catastrophe Insurance.' Active research programs are also on-going in a few universities. Despite these initiatives, respondents perceived some fatalism, with many believing that everything is happening because of Allah's will. And at times government programs may contribute to the issues. One respondent mentioned a dam

which instead of stopping flooding drained water resources from the ground, leading to poor water quality and affecting surrounding palm trees.

7. Conclusion

Adverse weather trends such as increased flooding and droughts shape the decisions to migrate made by household and individuals. Climate change is widely perceived to reduce crop yields and livestock production, decrease water availability, reduce fishing populations, and limit opportunities in rural areas that depend heavily on agriculture. The goal of this chapter was to contribute to a better understanding of the relationships between climate change, environmental degradation, deterioration of agriculture, and human mobility, through an exploration of the attitudes of rural residents and urban migrants in our five focus countries. Rural residents use a range of coping mechanisms to survive, ranging from eating less and borrowing money to selling livestock and other assets. Remittances are also important for survival, and when this source of income is insufficient, additional household members are forced to migrate to other areas in search of better opportunities. Overall, while in some countries such as Egypt and to some extent Morocco, there is a perception that migration opens up new opportunities, in other countries such as Syria, for many migrants migration may be a strategy of last resort than a real choice. While such differences between countries seem to emerge from the qualitative fieldwork, and tend to also be supported by quantitative household survey data, of course individual situations remain highly household and area specific within each of the five countries.

The qualitative work also suggests that for urban migrants, the arduous task of obtaining a job is further hindered by corruption and fierce competition with locals for limited employment opportunities. Social dislocation is a risk, with many migrants feeling inferior, alienated, and different in their new urban environs. Many face job discrimination, harassment, and exploitation at the hands of their supervisors and would-be employers. Poor housing conditions, rising food and rent prices, and the obligation to send remittances back home place substantial pressure on urban migrants. Yet, these coexist alongside some benefits. For example, migrants appreciate the independence, social outlets, and opportunities that urban life has to offer.

A number of suggestions were made by households as well as migrants about the types of programs that could be of help to them, in both urban and rural areas. It is not the place in this chapter to comment on whether such recommendations are appropriate, or even feasible to implement by governments. In order to come up with such an assessment, a much more detailed analysis of the types of programs proposed, their cost and their benefits, would be required. But what does emerge from the interviews with key informants is that while government officials and nongovernmental experts are aware of the consequences of climate change and extreme weather events for the population, they also recognize that the extent to which governments are dealing with these issues today is limited. This is a finding that is also emerging from other chapters in this study, in that both the community level responses and government programs and policies not only to cope with weather shocks, but also to adapt to climate change, remain insufficient.

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Annex 1: Focus Group Discussion and In-depth Interview Questions in Urban Areas

I. What would you say the biggest problem facing your household these days? Probing: Too little income; Poor living conditions; Lack of employment; Poor relations with my neighbors; Adjusting to the community; Lack of education; No family unity; Poor housing.

II. As you know, some people who live in this area have relocated from other places. From where did you relocate? Probing: How long have you been living here?; Can you describe your previous home to me -- what did you like the most? What did you like the least?

III. Why did you leave? Probing: To what extent were poor weather conditions, such as drought, storms or flooding, a reason for your relocation?; Was it the main reason, part of the reason, or only a very small part of the reason?; What was the impact of poor weather conditions on your household's ability to earn a livelihood?; Describe this to me. Did your household lose income because the weather affected farming?; Can you tell me what happened? Where there other reasons you relocated?

IV. Before you decided to move, what did you do to try to survive in your village? Probing: Changed jobs; Had more than one job; Ate or bought less food; Removed children from school? Was that a son or daughter?; Sent children asking for money; Sold Assets. Which assets?; Borrowed money. From where?; Tried to grow different kinds of crops? Which ones?; Used different tools and methods. Which ones?; Worked more and longer hours. Did women and girls especially have to work more?; Relied on income from family members who moved from your village to work elsewhere in the country or abroad? Where?; Relied on income from family already living in cities, other areas, or abroad?; What else?

V. How dependent is/was your family on financial help from other family members living in other areas or abroad? Probing: Would you starve or lose your home without it?; Could you only barely get by?; Would you be generally fine, and only have to cutback a little or give up some things?; Would you generally be fine and not have to cutback at all without assistance?

VI. When we choose to relocate to another area, we may relocate to a particular area based on certain factors. Why did you choose this town and neighborhood? Probing: Family members already lived in the area. Why was this important?; I know other people who moved here from my village. Why was this important?; Word of mouth; Proximity to home of origin; Heard of job opportunity; There are people from my ethnic group/tribe/religion/background.

VII. I would like to know more about your life since you relocated here. Since you have relocated here what are the biggest problems or challenges you have faced? Probing: Finding a job. Can you tell me more about this?; Debt. Can you tell me more?; Crime. Can you tell me more about this?; Fitting into this community/Conflicts with neighbors. Can you tell me more about this?; Getting good health care. Can you tell me more about this?; Going to school/Affording school. Can you tell me more about this?; Getting basic services such as clean water. Can you tell me more about this?; Access to electricity; Access to functioning sewage systems; Housing. Can you tell me more about this?; Thinking of where you previously lived, do you think that things like health care, education, clean water, sewage are better here?

VIII. Are you aware of any government programs that are targeted for people who have relocated for the reasons you described? Probing: Credit programs; Job training; Information about farming methods such as irrigation plans, better seeds, methods of feeding animals and caring for livestock; Information about alternative crops; Information about alternative farming activities; What about non-governmental programs that are intended to help people

like you?; Financial assistance; Thinking about what it was like when you first moved here from your origin town, what types of assistance would have been helpful for your household?

IX. Under what circumstances would you return to your previous home? Probing: How frequently do you return home?; What do you do when you get there?

Annex 2: Focus Group Discussion and In-depth Interview Questions in Rural Areas

I. Thinking about where you live now, including the surrounding conditions, what would you say is the biggest problem facing your community today? Probing: What about the economic situation? Why is this a problem in your view?; Lack of education? Why is this a problem in your view?; Conflict over resources such as water? Why is this a problem in your view?; Housing conditions? Why is this a problem in your view?; Bad farming conditions? Why is this a problem in your view?; Is drought a problem? How in your view?; Is flooding or storms a problem? How in your view?; Anything else?

II. Some people believe that this area has been affected by poor weather conditions, and by this, I mean drought, storms, or flooding. To what extent has this been a problem in your view? In what ways have poor weather conditions affected the daily life of your household? Probing: How has it affected your ability to earn a living from farming activity? In what way?; What sort of impact has it had on the amount of income brought into your household? Can you tell me more?; How has it affected relations among your family members? Have things become more or less stressful? In what way?; And in what ways have relations with your neighbors changed, if at all? How you become more or less dependent on neighbors? In what ways?; Is there more conflict over resources like water or good land?; Some household members are not as healthy; Ate or bought less food; Removed children from school? Was that a son or daughter?; Sent children asking for money; Sold Assets. Which assets?; Borrowed money. From where?; Tried to grow different kinds of crops? Which ones?; Used different tools and methods. Which ones?; Worked more and longer hours. Did women and girls especially have to work more?; Family members went abroad to work? Where?; Do you have to rely more on income from relatives living in cities, other areas, or abroad?; What else?

III. How dependent is/was your family on financial help from other family members living in other areas or abroad? Probing: Would you starve, lose your home and important assets without it?; Could you only barely get by? Tell me more; Would you be generally fine, and only have to cutback a little or give up some things? Where would you cut back?; Would you generally be fine and not have to cutback at all without assistance?;

IV. As I have mentioned, sometimes, the weather is not very good and farming is difficult. What kinds of programs are you aware of that are intended to help you improve conditions in your community and for your household? Probing: Do you know of any programs that provide credit and financial assistance?; Are you aware of information that helps you develop better irrigation practices?; How about programs to help you find other crops to farm, better seeds, or better tools?; What about programs to help you find buyers for your goods?; For those of you who aren't aware, what sorts of programs would best help you when your farming suffers as a result of poor weather?

V. I would now like to do something different in this discussion. I would like you to imagine a situation where there was a major flood or drought here and you were completely unable to earn an income from farming. Take five minutes to think about this. After five minutes, I am

going to ask you the four things you are most likely to do in order to survive. Please state first what you and most likely to do and so on. Probing: Sell family assets (personal belongings, tools, animals, durables); Eat/buy less food; Purchase lower quality food; Borrow money from relatives; Borrow money from friends, neighbors, community elders; Borrow food from relatives, neighbors, community elders; Grow only enough food to feed my family; Seek assistance from local mosques; Engage in illegal activities (things some might be ashamed of); Turn to local NGOs for assistance, such as…; Turn to state programs for assistance (cash or food transfers); Join with others to call attention to our situation; Learn about methods and technologies that would improve productivity of our land and animal breeds; Switch to other forms of agricultural activity to survive, such as…; Spend less money on health care and education; Pray more often/become more engaged in religion; Find other "non-farming" jobs in the area for alternative income; Ask children and women in the family to work; Take girl children out of school; Work longer hours; Work additional jobs; Share living spaces with relatives; Rent rooms or land to others; Migrate/relocate to other areas in our country.

VI. Some of you mention you would move somewhere else in our country. I would like those who would seriously consider moving to please raise their hand. To what town or city would you most likely move?

VII. Why would you move there? Probing: I have been there before and it is familiar; There is family who can help support us/me. How would they support you?; People I know from this area who have moved that and who can help support us/me; I don't know anyone there, but I hear they have jobs; Migrants tend to go there.

VIII. Once you moved to this area, what would you do to earn a living and survive?

Annex 3. Key Informant Questions for Government Officials and Non-governmental Experts

A. Government officials: How important an issue is climate change – has it become more of a priority for your government?; Why has climate change become an important concern? Do you see climate change as a significant problem in the future?; How has environmental degradation affected rural populations in particular? What about urban areas that are attract rural migrants?; What are the challenges facing policy makers in dealing with climate change migration? What are the gaps in knowledge and resources?; What is the government doing about rural-urban migration? Is there any public assistance available to migrants and rural populations affected by environmental degradation? Can you please describe them to me?; What is the government planning to do?; What do you think is the level of public awareness about existing programs?; Why has it been difficult to address this issue?; If there are no programs, what kinds of programs would be most beneficial in your view?.

B. Non-governmental experts: How has climate change affected this country? In your view, has is contributed significantly to environmental degradation? And how do you think climate change will affect the country in the future?; How has environmental degradation affected rural populations in particular? Do certain populations, such as women and girls, bear a greater burden?; What kinds of problems are you seeing?; Some people may choose to relocate to other areas as a coping mechanism. What is the profile of a typical migrant in this country? In other words what type of person migrates and why?; To where do people tend to

migrate in this country and why?; Have these patterns and destinations changed over time to your knowledge?; What sorts of challenges do migrants face when they relocate from one place to another? What are the political, social, economic, health-related, and practical challenges that migrants face?; Not everyone is able relocate. What would you say are the biggest obstacles to migration?; Many migrants face various kinds of environmental shocks, such as floods and or drought. These shocks often affect agricultural productivity and thus income and the very livelihood of households. How do migrants cope to these situations? What survival strategies do they adopt?; Is there any government assistance available to migrants and rural populations affected by environmental degradation?; Is there any non-government assistance available to migrant and rural populations affected by environmental degradation?; What do you think is the level of public awareness about existing programs?; And if there are no programs, what kinds of programs would be most beneficial in your view?