Addressing the Water-Migration Nexus

An analysis of the links between Water and Migration in the Syrian crisis

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ADDRESSING THE WATER-MIGRATION NEXUS: AN ANALYSIS OF THE LINKS BETWEEN WATER AND MIGRATION IN THE SYRIAN CRISIS

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Abstract

At a time when water crises are considered one of the most critical global challenges and the number of refugees have reached an all-time high, there is a growing need to understand the interlinkages between water and migration. However, while it is tempting to over-simplify the links between water and migration, it is crucial to develop a deeper analysis of their complexity. The aim of this working paper is to contribute further to the ongoing debate about the interlinkages between water and migration, in particular from a governance perspective. We apply the ‘drivers for migration’ conceptual framework to analyze the triggering factors for migration in the Syrian case. Our analysis is developed at three different scales (macro, meso and micro) and from five perspectives (economic, political, demographic, social and environmental). Although not exhaustive, the analysis highlights the complexity between water and migration, and the role of water governance in migration policy, in particular as both a barrier and facilitator to movement.

Keywords: Water; Migration; Water Governance; Syria
1. INTRODUCTION

Declining water availability, together with rising water insecurity, have long been a factor in the decision to migrate. For centuries, communities around the world have acclimated to seasonal water supplies by migrating. Today, however, the intensification of water challenges has induced new patterns of human migration. As evidence shows, water scarcity plays a key part in today’s migration flows. For instance, environmental refugees – i.e. people who can no longer gain a secure livelihood in their homelands due to water shortages, desertification and other environmental challenges – have rose from 25 million in 1995 to almost 50 million in 2010 (Myres 2010). By 2025, it is estimated that nearly 2.4 billion people will be living in regions subject to intense periods of water scarcity, which may displace as many as 700 million people (UNCCD 2014). Furthermore, data on drought-induced displacement available through the IOM’s Displacement Tracking Matrix estimates over 1.2 millions of internally displaced people in Somalia alone (IOM 2017). This number of water-related displacements will only continue to grow, as forced migration will be inevitable in the face of climate change and environmental degradation (Simonelli et al. (2019).

The challenges of water-related migration are particularly acute in the Middle East and North Africa (MENA) region. As one of the most affected regions by water scarcity (Creel et al. 2002, Hameed et al. 2019), one of MENA’s upcoming problems is forced migration due to water scarcity and other related environmental challenges. It is projected that by 2025 more than 70% of the MENA countries will be in the grip of severe water scarcity, leading to more migration flows in search for a better quality of life (El-Kharraz et al. 2012). In Gaza (Palestine), for example, water availability is already under international health standards; Jordan is currently in an alarming depletion of freshwater; and even Lebanon, which has the highest water resources in the region, is in danger of water scarcity (Ibid.). Furthermore, the cross-linked factors influencing water scarcity make effective water management in the MENA region a difficult endeavor. As reported by Tropp and Jägerskog (2006), although there are many options to improve water management in the region – from technical alternatives to governance and transboundary cooperation – there are no blueprint solutions to the challenges related to water.
All this makes the management of water resources more prominent in the migration debate, and vice versa. However, while the existing debate may over-simplify the linkages between water and migration, it is important not to jump into hasty conclusions as their interlinkages are more complicated (Jägerskog & Swain 2016). Although the impacts of water scarcity can force people to migrate, it is not easy to establish an explicit link between water scarcity and migration. Water scarcity can seldom be detached from the social, economic, political and demographic drivers of migration. In other words, water can be both a push and pull factor for migration, and thus the linkages between water and migration need to be analyzed in a holistic manner. Indeed, in a recent study by Abel et al. (2019) on the links between climate, conflicts and migration, water scarcity was found to be one of the main drivers of migration, but many other drivers affected both the migration and resulting pressures of environmental refugees on the host countries. In their analysis, the authors highlighted that the complexity of this theme lied in the many interlinkages between environmental issues and migration.

The purpose of this working paper is to contribute further to the ongoing debate about the interlinkages between water and migration, in particular from a governance perspective. The conceptual framework developed by Black et al. (2011) is applied to investigate the drivers and factors affecting the decision to migration. The case of Syria is selected for illustrative purposes. Results from this initial application are analyzed to demonstrate the complexity between water and migration, and the crucial role water governance plays in migration policy.

The rest of this paper is organized into four sections. Following this introductory section, Section 2 describes a summary of what has been done in terms of understanding the links between water and migration. Section 3 discusses the conceptual framework developed by Black et al. (2011) and Section 4 presents its application to the Syrian case. Finally, Section 5 synthesizes some conclusions and recommendations.

2. LITERATURE REVIEW ON WATER-MIGRATION ANALYSES

This section reviews existing literature on the effects of water resources – in particular their scarcity – on human migration.
Myers (2010) studied the issue of environmental refugees, providing important data on the number of people forced to migrate due to drought, desertification and other environmental problems, the majority of them linked directly to water. In his analysis, Myers emphasized the difficulty of differentiating between environmental and economic refugees, as there is a gradient of factors pushing people to migrate (e.g. malnutrition, unemployment, rapid urbanization, pandemic diseases and conflicts). He also highlighted how the lack of an official recognition of the environmental refugee problem hinders the adoption of preventive policies that reduce the need of people to migrate. According to Myers, a key step forward would be to expand the approach to refugees to include environmental refugees in particular, and deepening the understanding of environmental refugees by analyzing the root causes of the problem.

Warner (2010) also studied the migration potentials linked to environmental change by investigating the role of the socio-ecological system in human migration. Empirical evidence from three countries – Mozambique, Vietnam and Egypt – revealed how both rapid (e.g. floods and earthquakes) and slow-onset (e.g. land degradation, desertification, water shortages and droughts) environmental factors contributed to migration. As reported by Warner, distinguishing between these two types of factors provides a useful starting point for understanding the potential governance needs of migrants, as well as the gaps in current institutions and policies designed to tackle human migration. The analysis concludes that new governance approaches, with more adaptive capacity and participation, are needed to manage environmentally induced migration.

Jägerskog and Swain (2016) discussed some of the linkages between water and migration. By taking a look at the Syrian refugee crisis, the authors revealed how water scarcity became a major catalyst for migration. Most importantly, their analysis underlined the need to move beyond overly simplistic and casual links between water scarcity and migration, as these may lead to flawed policy responses. Instead, Jägerskog and Swain suggest to see water scarcity of one of many push factor multipliers for large-scale population migration.

Miletto et al. (2017) also assessed the interdependencies among water scarcity, youth unemployment and migration. This assessment evidenced the existence of a myriad of interlinked factors – climate change, water scarcity, ecosystem degradation, loss of jobs and age inequalities – having a part in triggering environmental migration. According to
these authors, a new approach for addressing migration drivers is a more open and inclusive water-related governance, where a broad range of stakeholders are involved in water management.

More recently, Jobbins et al. (2018) have explored the role of water in driving migration from the perspectives of four groups: migrants, migrants’ origin communities, service providers and the policy community. The briefing note explained how the role of water in the decision to migrate can be both complex and indirect. Consequently, it becomes necessary to understand who migrants are, why they have moved and how these issues relate to their water needs. However, as the briefing highlights, the poor visibility of migrants in monitoring data often limits the understanding of their needs and reduces the accountability of governments and service providers.

Wrathall et al. (2018) also investigated the linkages between water stress and migration. By assessing 116 peer-reviewed, empirical research articles, this study focused on four categories of water problems and migration: agricultural problems (e.g. drought, changes to growing periods); flooding vulnerability (e.g. rivers, coastal inundation); water infrastructure problems (e.g. water scarcity or water quality); and water conflict (e.g. social conflict over access to or use of water resources). The analysis revealed that migratory responses to water stress were context-dependent and varied from region to region. Yet, they all shared a common characteristic: migration likelihood increases as households cycle through the different in-situ adaptation strategies available. That is why adaptation policies – such as sustained investment in local livelihood diversification and social protections for the most vulnerable – can be critical to diminish the drivers to migrate as a means to avoid water stress.

Other researchers have focused on the consequences of water scarcity in terms of water conflict. For instance, Almer et al. (2017) explored the possible relationship between water shocks and the level of small-scale conflict (e.g. in the form of violent riots). Their data for sub-Saharan Africa showed the effect of the current drought situation on the level of rioting. Selby and Hoffman (2014) also studied the interlinkages between water scarcity and internal conflicts in the states of Sudan and South Sudan. Their analysis emphasized the difficulty of dealing with water scarcity without considering other economical, societal and political factors.

3. METHODS AND CASE STUDY
This section discusses the conceptual framework for the drivers of migration developed by Black et al. (2011), and provides a small overview of the case study selected.

Whereas most assessment of the effect of environmental factors on migration start with the environment as a driver, the framework presented by Black et al. (2011) encompasses a range of drivers that might affect migration movements (Figure 1). The framework identifies the main factors influencing migration in different levels: macro, meso and micro. Macro level factors include economic, political, demographic, social and environmental structures at multiple spatial and temporal scales. Meso level factors act as intervening barriers and facilitators of migration. Finally, micro level factors help determining the decision to migration. By distinguishing between various levels and dimensions (Table 1), the framework underscores the multifaceted structure of the migration process.

In this working paper, the case of Syria is used to illustrate the conceptual framework. This case study was selected for two main reasons. First, Syria’s refugee crisis has resulted in a mass influx of Syrian migrants into other countries throughout the MENA region and beyond, becoming the largest refugee crisis in recent history. Second, although the role of water in Syrian migration as already been analyzed previously in the literature (Gleick 2014; Jägerskog & Swain 2016, Alshoubaki & Harris 2018, Selby 2018), this paper takes an inclusive approach of all potential drivers.
Figure 1. Conceptual framework for the ‘drivers of migration’ (adapted from Black et al. 2011).

Table 1. Levels and dimensions of the drivers of migration.

<table>
<thead>
<tr>
<th>LEVELS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macro</td>
<td>Five drivers of migration – social, demographic, economic, political and environmental – that rarely act in an isolated manner</td>
</tr>
<tr>
<td>Meso</td>
<td>Intervening barriers and facilitators to movement (e.g. policy and legal frameworks in place)</td>
</tr>
<tr>
<td>Micro</td>
<td>Personal circumstances of migrants (e.g. age, sex, educational level, wealth, marital status, attachment to place, attitudes and</td>
</tr>
</tbody>
</table>
preferences) and their household characteristics (family unit and power relationships)

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
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<tbody>
<tr>
<td>Economic</td>
<td>Employment opportunities and income disparities between places</td>
</tr>
<tr>
<td>Political</td>
<td>Conflict, security, discrimination and persecution, together with public and corporate policies</td>
</tr>
<tr>
<td>Demographic</td>
<td>Structure and size of populations, as well as the prevalence of diseases that affect morbidity and mortality.</td>
</tr>
<tr>
<td>Social</td>
<td>Cultural or familiar expectations and obligations</td>
</tr>
<tr>
<td>Environmental</td>
<td>Exposures of hazard and availability of ecosystem services, such as water security</td>
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4. RESULTS

AND DISCUSSION

The discussion below seeks to determine how the different drivers have affected the decision to migrate in the case of Syria.

Economic drivers

Although the Syrian economy in early 2000s was stable, poverty and unemployment were on the rise. According to the 2010 Millennium Development Goals country report (UNDP 2010), the headcount poverty ratio (i.e. the proportion of the population living the national poverty line) deteriorated since 2004, rising to 12% in 2007. What is more, poverty had a strong geographical dimension: in rural regions poverty was much higher than urban and national indicators. For instance, the northeastern region of the country, which was predominately rural, had the highest headcount poverty ratio (about 15%) and accounted for more than 55% of the population.

In addition, the employment opportunities remained low and volatile, especially for new entrants to the labor market. According to the World Bank data, in 2007, 60% of households had none or only one person employed (World Bank 2018). These high levels of unemployment were not only linked to population growth and general economic conditions, but also to the mismatch between the skills generated by the educational system and those required by the private sector.

However, these income and employment deficiencies cannot explain migration alone. Migration is a highly specific process linked to the personal circumstances of migrants (i.e. the micro-level) such as class, ethnicity, religion, language and education level. For instance, the probability of Syrians to migrate to Europe was found to be higher among refugees in Turkey than in Lebanon or Jordan, mainly due to the strong ethnic, linguistic and family ties (Sansal 2015).

Political drivers

Political uncertainty, even prior to the civil war conflict, has played a significant part in triggering the decision of Syrians to move. As revealed by Yahya et al. (2018), deteriorating security conditions, in particular specific incidents threatening them or their family, was a key factor in Syrian refugees’ motivations and decision to migrate. Around 82% of the Syrian refugees in Lebanon and Jordan fled their country due the increasing insecurity (e.g. arbitrary arrests or death of a family member of friends).
On the other hand, government policies to intake refugees can also be seen as a political driver of Syrian migration. The open door policy for migrants adopted initially by countries like Germany was considered to act as a ‘pull factor’ for migration (PWC 2017).

**Demographic drivers**

The effect of demographic factors on Syrian migration is seen through their interaction with economic drivers. For instance, while population in Syria grew between 1991 and 2008 by 50%, the rate of those employed fell from 46.6% to 44.8% (UNDP 2010). This meant that population growth contributed to diminishing employment opportunities for an estimated 250,000 Syrians annually.

Demographic characteristics such as the age of a source country influences who moves in response to economic drivers. Syrian refugees are mostly young (52% aged below 16 years old), which reveals their high propensity to migrate (De Bel-Air 2016). Similarly, the demographic characteristic of a receiving country may affect the demand for employment opportunity, and hence become a pull factor for migration.

**Social drivers**

For Syrian refugees, multiple social drivers determined their decision to migrate, including: the opportunity to reconnect with family and community networks, cultural affinities, and the possibility of better educational opportunities (Yahya et al. 2018). Indeed, the Syrian diaspora before the current crisis is considered to be an important pull factor for migration (Sansal 2015). The Syrian population in Europe prior to the crisis – particularly Germany and Sweden – most likely attracted Syrian refugees thanks to familial ties.

Furthermore, as Black et al. (2011) points out, the largest effect of social drivers is on the destination of migration and once established, initial movement can lead to further migration.

**Environmental drivers**

Pressures on Syrian water resources have been increasing for the last 25 years. Water availability in Syria is, on average, less than 250 mm of rainfall annually (Reign et al. 2013), with more than 60% of its renewable and groundwater resources originating
outside its borders (Frenken 2009). All of the country’s major rivers (i.e. the Tigris, Euphrates, Orontes, and Yarmouk/Jordan) are shared with neighboring countries, and, as the average annual flows declined, tensions over the management of these rivers worsen (Gleick 2014). The population growth in Syria also played an important role in hydrologic vulnerability: the country’s renewable water availability per capita decreased from 5,500 m³ per person per year in 1950 to under 760 by 2012, a level categorized as scarce. In addition to this low water availability in proportion to demands, Syria, like the MENA region as a whole, experiences high natural hydrologic variability, with multi-season, multi-year periods of extreme drought (Trigo et al. 2010).

As many researchers have highlighted (Selby et al. 2017, FAO 2012, Weinthal et al. 2015), drought and other related factors – including water shortages and agriculture failure – have been major drivers for the Syrian migration. In particular, the combination of severe drought, and the related socio-economic deterioration contributed to massive rural-urban displacements. An estimated 800,000 Syrians lost their livelihoods between 2006 and 2009 due to the drought, and the plummeting yields of wheat and barley drove 1 million people into food insecurity (Solh 2010).

However, barriers or facilitating mechanisms (i.e. the meso level) can decrease or amplify the effect of environmental drivers. In Syria, the socio-economic damages of the droughts were worsen by the mismanagement and lack of adequate water governance (De Châtel 2014). Evidences of poor water governance and water policies include:

- An inadequate and arcane institutional framework in the water sector: it was not only heavily bureaucratic and fragmented – with 22 ministries, councils and commissions involved in water management – but also fraught with overlapping responsibilities, poor coordination and rivalries (Hinnebusch et al. 2013).

- A widespread lack of capacity to manage water resources appropriately: only a small minority of staff in the ministries of Agriculture and Irrigation had a graduate degree, which undermined these institutions’ competence in water management (Smets 2009).

- An absence of transparency and accountability in the water sector: this did not only lead to unimplemented policies, inconsistently enforce laws and uncompleted reform projects, but also hindered the government’s ability to implement sustainable water policies and practices. For instance, Wada et al.
estimated that nearly 80% of groundwater withdrawals in Syria exceeded the recharge rate, yet the government failed to address the continuing over-exploitation of aquifers.

Altogether, the mismanagement of water resources added to the growing discontent and marginalization of Syrians – in particular of rural communities – and resulted in the government’s failure to adequately respond to the drought crisis. That is why proper water governance plays a central role in migration policy. Good water governance – i.e. a set of rules, practices and processes through which decisions for water resources management are taken and implemented, and decision-makers held accountable – can be an instrument for eliminating or mitigating water-related drivers of migration. If national water governance and management policies and practices are efficient, this will quell conflict and ultimately migration (Foresight 2011). Therefore, as Tignino and Mach (2018) explain, water governance must be included in the migration debate, and vice-versa. Migration policies need to take into account the water governance frameworks in place, and, simultaneously, water governance structures must recognized the need to migrate and safeguard the basic needs of migrants.

*Interactions between the drivers of migration*

The analysis of the Syrian refugee crisis reveals how water scarcity interacts with numerous other micro-level, meso-level and macro-level factors, shaping altogether the migration patterns. At the macro level, the Syrian migration resulted from a combination of factors, including poverty and unemployment, political uncertainty, population growth, social networks and drought. Of course, these macro-level factors interacted with household and individual characteristics of Syrians, such as age, wealth, gender and education level. Furthermore, just as macro and micro level contexts shaped the migration response, so did the governance structures in place. Poor water governance, in particular, exacerbated the consequences of the environmental drivers.

This demonstrates the complexity of the water-migration connection, affected by multi-level and multi-dimensional influences. Consequently, an improved and comprehensive understanding of all dimensions of migration debunks the overly simplistic view of environmental refugees.

5. CONCLUSION
‘... in Syria, it was not the drought per se, but rather the government’s failure to respond to the ensuing humanitarian crisis that formed one of the triggers of the uprising, feeding a discontent that had long been simmering in rural areas. Drought forms an integral part of Syria’s (semi-)arid climate and is not an exceptional phenomenon. Countries in the region such as Iraq, Israel, Jordan, Lebanon and Palestine were also affected by drought in 2007/8, but only Syria experienced a humanitarian crisis, with large-scale migration of populations and widespread malnutrition. [...] While climate change may have contributed to worsening the effects of the drought, overstating its importance is an unhelpful distraction that diverts attention away from the core problem: the long-term mismanagement of natural resources.’

De Châtel (2014)

The reality described above contains all the interlinked factors that have triggered the Syrian migration crisis: water scarcity was one of the causes, along with a host of economic, political and social challenges.

Although not exhaustive, our analysis of the Syrian migration confirms two key points. First, the complexity of the water-migration connection requires focusing on all underlying drivers in order to develop effective policies for environmental migration. Second, special attention must be paid to the water governance frameworks in place, as they can constitute both barriers and facilitators to migration. In this sense, progress in terms of better water governance will be needed in order to increase the resilience to water challenges, and provide long-term solutions to the global migration phenomenon.

The time is now ripe for more in-depth research to better understand the linkages between water governance and migration policy. Researchers should continue to combine data to further our understanding of the water-migration nexus, but also develop new conceptual frameworks that facilitate and strengthen future analyses. Furthermore, given the tremendous policy importance of water and migration linkages, more dissemination of findings is needed. Indeed, a contextual analysis of the water-migration nexus has much to offer both theoretical and empirically, but, most importantly, helps practitioners, researchers and policy-makers address the migration challenge.
References:


