

**Climate Change and Migration**  
Exploring the Linkage and what needs to be done  
in the context of Pakistan

Series on Vulnerability and Resilience

Adnan Sattar

## LEAD Pakistan

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## About The Author

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## About the Series on Vulnerability and Resilience

This research series, as the name suggests, comprises of prime studies that examine the vulnerability to a host of climate induced hazards and also suggests measures to build resilience against them. Each individual study, while conducted in the Pakistani context, reviews the state-of-the-art, both in terms of the ongoing debate around the issue as well as the global best practices. It also reflects LEAD Pakistan's ambition of carrying them out to the highest international standards. To this end, apart from other more traditional measures, a panel of international experts for each of the studies has been put together to review it rigorously.

# Abbreviations and Acronyms

ADB	Asian Development Bank
BoE	Bureau of Emigration
CDM	Clean Development Mechanism
CKDN	Climate Knowledge and Development Network
ECHR	European Convention on Human Rights
ECTHR	European Court of Human Rights
FATA	Federally Administered Tribal Areas
GEF	Global Environment Facility
GCF	Global Climate Fund
GLOF	Glacial Lake Outburst Floods
IDP	Internally Displaced Person
IOM	International Organisation for Migration
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
LEAD	Leadership for Environment and Development
OAU	Organization of the African Union
OEP	Overseas Employment Promoter
OHCHR	Office of the High Commissioner on Human Rights
PMD	Pakistan Meteorological Department
OGB	Oxfam Great Britain
UN	The United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commission for Refugees

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## Foreword

While LEAD Pakistan has been carrying out research studies on various key issues of environment and development, bulk of this work has been episodic, lacking in continuity to stay engaged with a particular theme. It is our aim to break out of this pattern and explore a vital area of sustainable development through different lenses and perspectives. This and the salience of climate change, with its likely impacts on a highly vulnerable Pakistan, have set us to launch a whole series on Vulnerability and Resilience.

This research series, as the name suggests, comprises of prime studies that examine the vulnerability to a host of climate induced hazards and also suggests measures to build resilience against them. Each individual study, while conducted in the Pakistani context, reviews the state-of-the-art, both in terms of the ongoing debate around the issue as well as the global best practices. It also reflects LEAD Pakistan's ambition of carrying them out to the highest international standards. To this end, apart from trying to get the best in Pakistani expertise in these areas, though not limiting to Pakistani authors, where such expertise does not exist at the desired level; a panel of international experts for each of the studies has been put together to review it not only for the quality of research it presents but also against the sharp analytical touchstones of relevance, comprehensiveness, coherence and validity.

But most importantly, the main purpose of the series goes beyond the desired academic rigour and excellence of discourse. These studies abstract from the lessons learnt globally, and applying them to Pakistan, aim to come up with actionable and meaningful recommendations for the policymakers in the country. As such, the real success of each study would be measured against the level of debate it generates among the policy stakeholders and its ability to impact the relevant policy itself.

First in the series, this study explores the links between climate change and migration - including rural-urban migration - with the latter being resorted to as an adaptation mechanism. Drawing on from relevant documented evidence from both Pakistan as well as globally, it provides a springboard for new research and policy engagement in the country. Therefore, even at this stage, it's a work in progress, and we would welcome your comments, critique and suggestions for its progression towards the ultimate goal stated above.



Ali T. Sheikh  
CEO, LEAD Pakistan

## Executive Summary

The relationship between climate change and migration is little understood. Sometimes alarmist predictions are made, extrapolating entire populations of regions at risk of sea-water intrusion, sudden extreme events, and other climate hazards to arrive at numbers of people being 'displaced' due to climate change. On the other extreme are those who wriggle out of a serious intellectual discourse on the topic, citing difficulties in attributing migration and population displacement to climate change.

While recognising the problems in making precise projections and isolating 'climate change' as 'the driver' for human mobility, this paper contends that the consequences of climate change, in interaction with other social, economic, demographic factors, are likely to influence population movements in significant ways in times to come.

Yet, we insist that there is no straight-forward, mono-causal relationship between climate change and migration. This is more so the case where gradual natural resource degradation is involved as compared to sudden extreme events. Even in the latter case, evidence suggests that pre-disposing conditions, such as degree of exposure to a natural hazard and level of preparedness, have a bearing on who gets displaced and for how long. In some contexts, the most vulnerable are not necessarily those ones who get 'displaced'. Mobility entails costs, both financial and social. As a result, those on the margins of society sometimes get trapped into hazardous and distressful situations and are unable to move out in time.

Citing examples from around the world and Pakistan, the paper attempts to show that environmental change is already one of the major factors that shape human mobility in the form of rural-to-urban migration, seasonal migration in times of water stress, and so on. The effects of climate change, we contend, will be complex and mediated by the vulnerability, past patterns of mobility, people's resilience and adaptive capacity and the nature of state interventions. The paper stresses the need for framing migration as part of climate change adaptation. There are two aspects to it. One relates to in situ adaptation, which reduces the need for migration, especially stress migration. And the other aspect refers to migration as a planned adaptation response to consequences of climate change.

There is a difference, we suggest, between migration as a short-term coping mechanism, which often depletes people's resilience overtime, and migration as adaptation. The latter requires state interventions in ways which build people's absorptive and adaptive capacity in the form of enhanced human and financial capital and knowledge about migration options, for example. Successful migration, in turn, can reinforce adaptive capacity through remittances and transfer of knowledge.

In line with the dynamic and multidimensional conceptualization of migration that we adopt, we take issue with classification schemes that slot all climate-related mobility into neat categories, such as 'environmentally displaced' or 'climate refugees'. The debate is important because it shapes the way policy makers analyze and address environmental change and human movement.



The evidence we have reviewed gives us strong reason to surmise that much of population movement in the context of climate change is likely to be internal. However, some level of cross-border displacement and planned international migration cannot be ruled out, especially where there are established migratory corridors or diaspora links. This necessitates a fresh look at global legal regime governing voluntary and forced migration. Instead of calling for a separate instrument to cover 'climate-induced displacement', as some scholars and activists have proposed, we stress the need for improving current legal regimes and a more liberal interpretation and application of existing law based on the merit of each case.

Within the context of Pakistan, we highlight serious gaps in data collection and policy. For example, official census data simply precludes the enumeration of environmental causes of migration by framing the relevant question in a biased, close-ended style. Similarly, despite having high levels of internal migration, much of which is related, at least in part, to environmental change, the country simply does not have a 'migration policy'. Much of the available literature dealing specifically with migration and climate change is global or regional in scope. In addition to drawing on some relevant documented evidence from within Pakistan, this paper engages with general conceptual accounts and global studies to provide a springboard for new research and policy advocacy in Pakistan around migration in the context of climate change.

## Introduction

The aim of this paper is to explore the diversity and complexity of human mobility in the context of climate change. Attempt is made to view such migration as embedded within social, economic and political contexts as well as historical patterns of population movements. After presenting an overview of empirical and conceptual issues in the present introductory chapter, we dig deeper into the nature of climate-related migration in Section 2. Moving beyond a simplistic linear relationship between climate change and 'displacement', we look at a range of drivers that are known to determine mobility responses and draw out implications for climate change scenarios. The chapter also delineates the relationship between adaptation and migration with a view to suggesting ways to minimize forced migration and maximize the benefits of migration as adaptation. Section 2 also looks at internal and external migration within the context of Pakistan and its relationship with environmental factors. A couple of case studies from vulnerable regions or hotspots within Pakistan are also presented as signposts to possible patterns of mobility in the context of climate change. Section 3 identifies substantive gaps and implementation challenges in international legal and policy framework as it applies to migration in the context of climate change and proposes practical strategies and normative criteria for regulation of such migration. Key policy issues are discussed with reference to Pakistan and recommendations proposed for responses that may help minimize the costs and maximize the benefits of human mobility in relation to emerging climate change scenarios. In closing, Section 4 weaves together key arguments and offers broad conclusions.

### 1.1 Background

The fact that the climate on the earth is changing is no longer seriously contested. After years of having to argue with skeptics, including think tanks believed to be funded by coal and oil industries,<sup>1</sup> natural scientists can now speak of a consensus emerging within scientific community around the reality of global warming and climate change.<sup>2</sup> That this change is happening due at least in part to human activity is also 'generally accepted by the scientific community' today.<sup>3</sup>

In 2007, the Inter-governmental Panel on Climate Change (IPCC) declared in its Fourth Assessment Report that the previous eleven out of twelve years had been the hottest on record. Discussing the impact of climate change,<sup>4</sup> the report highlighted, among other things, the likelihood of migration and population displacement in relation to an increase in areas affected by drought, more intense tropical cyclone activity, and increased incidence of 'extreme high sea levels'.<sup>5</sup> Current evidence points to an increase in hydro-meteorological events, namely floods, droughts, storms and hurricanes, heat-waves and related wildfires. It is highly likely that these are linked to global warming.<sup>6</sup>

In recent years, the world has already witnessed massive population displacement in the aftermath of extreme events, such as Hurricane Katarina. Drought and water scarcity, especially in Asia and Africa, are already known to be among major motivators for migration, both temporary and permanent. There is evidence, as we shall discuss at some length in a subsequent section, of what is generally classified as labour migration, both internal and

(1) Riley E. Dunlap and Aaron M. McRight, Organized Climate Change Denial, in The Oxford Handbook of Climate Change and Society, eds. John S. Dryzek, Richard B. Norgaard, and David Dcholsberg, 144-160 (Oxford: Oxford University Press, 2011). (2) John S. Dryzek, Richard B. Norgaard, and David Dcholsberg, Climate Change and Society: Approaches and Responses in Dryzek et al, 4.( 3) Duncan McGregor, Climate Change and Development in The Companion to Development Studies, eds. Vandana Desai and Robert B. Potter, 282-7 (London: Hodder Education, 2008 2ndedn). (4) Intergovernmental Panel on Climate Change (IPCC), Climate Change 2007: Synthesis Report, Summary for Policymakers. Available at [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr-spm.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr-spm.pdf).p 2.(5) ibid. (6) Terry Canon, Vulnerability and Disasters in Desai and Potter (2008), 302. (7) K. Warner et al, "Climate Change, Environmental Degradation and Migration", Natural Hazards no. 55, (2010): 689-715. (8) We discuss this phenomenon at some length separately in sub-section 2.3.



international, to have links with environmental change.

In historical terms, people have sought out environments that could support human survival as well as aspirations for more stable existence. Putting the debate on climate-related population movement in a historical perspective, Warner et al have observed that migration, both temporary and permanent, internal as well as external, has been a 'coping strategy for people facing environmental changes such as sudden disasters, creeping processes, or cyclical climate conditions'.<sup>7</sup> Seasonal migration among farming and pastoral communities in Pakistan's arid regions, for example, is a long-standing practice to cope with dry seasons.<sup>8</sup> Existing and future mobility on account of environmental change has continuities with the past, which we need to acknowledge. The magnitude of predicted changes in the climate and the consequences thereof may throw up challenges with no historical precedents, however.

According to Adam Hugo, the pace and scale of climatic changes is but one factor that distinguishes current and predicted mobility from historical patterns of environment and related-migration. Equally important, on his account, is the increased gap between the capacities of different countries to cope with environmental change, which might result in increased population flows from developing countries to the developed world. He also highlights the prospect of greater levels of international migration-as compared to internal population flows due to environmental factors in the past-as a distinguishing element.<sup>9</sup>

While the Fourth Assessment Report stopped short of speculating on the current

and projected extent of such migration, the Panel had, in an earlier report, noted that up to 150 million people could be displaced by 'climate-related phenomena' by the year 2050.<sup>10</sup> Elsewhere, estimates range from 50 million to as many as 200 million people on the move due to climate-related phenomena by the mid of the current century.<sup>11</sup> This huge range in estimates is a clear reflection of the problem of defining and scoping climate change-related migration. While one may question the precision and validity of such estimates, there is mounting evidence to suggest that the consequences of climate change combined with other drivers may influence human mobility in significant ways.

## 1.2 The Challenge of Attribution

One reason why it is so difficult to map and project climate-related migration is what is known in social science literature as the issue of 'attribution'. The link between human mobility and environmental change may be relatively more evident in the case of sudden extreme events with large-scale devastation and ensuing displacement. The task of establishing a co-relation becomes particularly challenging where slow-onset or creeping phenomena like drought and water scarcity are involved.

To elaborate, how do you decide if farming families from the Indus Delta who move into a shantytown in Karachi along the sprawling city's coastline citing scarcity of drinking water as the major cause of migration were driven by climatic changes? The fact that ground water resources had depleted in their village might well have been a consequence of over-extraction rather than a long-term change in climate. Perhaps, sea-water intrusion and cyclones may have affected the quality of ground water, in which case the link with climatic

(7) K. Warner et al, "Climate Change, Environmental Degradation and Migration", *Natural Hazards* no. 55, (2010): 689-715.

(8) We discuss this phenomenon at some length separately in sub-section 2.3. (9) Graeme Hugo, "Environmental Concerns and International Migration", *International Migration Review*, Vol. 30, No. 1, Special Issue: Ethics, Migration, and Global Stewardship (1996): 112. (10) Climate Change-The IPCC Scientific Assessment. Available at [www.ipcc.ch/ipccreports/far/wg\\_1/ipcc\\_far\\_wg\\_1\\_full\\_report.pdf](http://www.ipcc.ch/ipccreports/far/wg_1/ipcc_far_wg_1_full_report.pdf) (11) Richard Black et al, *The Atlas of Human Migration. Global Patterns of People on the Move*. (London: Earthscan, 2012) 72.

changes would probably be much stronger. Direct causality would still be hard to establish as many believe upstream extraction of fresh water as the main reason for sea-water intruding inland.<sup>12</sup> Taking a broader look at the social context from which the migrants originated, you may justifiably inquire whether they had moved out of their village if some alternative source of drinking water had been made available to them. If the answer is in affirmative, the focus would inevitably shift away from environmental change per se toward gaps in policy and a failure of entitlements. At the same time, even if fault is found to be lying primarily with policy and political economy, climate change will still have to be factored in as a proximate cause where there is evidence of sea-water intrusion and repeated cyclones.

Alternatively, let us consider the well-known case of massive population displacement, both internal and external, that occurred in the Darfur region of Sudan, starting early 2003. On the surface, an ethnic armed conflict between government-backed Arab Janjaweed militia and non-Arab Sudanese, the crisis, many believe, had its roots in environmental degradation and failing rains. The tensions between Arabs, who were generally herders, and Africans typically farmers, took on a racial and ethnic shape and led to entrenched divisions along those lines throughout 1980 and 1990s as there was a dramatic decline in rainfall. As desertification worsened and as fertile land decreased, some pastoralists sought to have their own land through violent means, forcing many farmers out of Darfur and toward the border with Chad.<sup>13</sup>

In recognizing the environmental roots of the conflict, some observers put their finger

on deforestation and overgrazing as the cause of reduced rainfall. Others, such as Columbia University's Alessandra Giannini, were of the view that it was rising temperatures in the tropical and southern oceans, combined with cooling in the North Atlantic, which had disrupted the African monsoons.<sup>14</sup> An endorsement of this link may be found in the UN Secretary General Ban-Ki-Moon's observation in an article he wrote for the Washington Post. 'Amid the diverse social and political causes', the Secretary General said, 'the Darfur conflict began as an ecological crisis, arising at least in part from climate change'.<sup>15</sup>

These preliminary examples, we hope, will help illustrate that there is no neat, universally-agreed causality between climate change and migration, making it difficult to account for such mobility in statistical terms. In most cases, climate-related phenomena are enmeshed with environmental depletion, population pressure, social and political divisions and so on. Taking this complexity onboard, a recent report on climate change and migration, sponsored by the British government, states that 'it will rarely be possible to distinguish individuals for whom environmental factors are the sole driver'.<sup>16</sup>

As regards scoping and forecasting climate-related migration, an additional issue is our inability to predict with any degree of precision as to what kind of adaptation measures will be taken which could prevent or facilitate population movement. The influential and oft-cited Stern Review of the Economics of Climate Change is clear in this respect and states that 'the exact number who will actually be displaced or forced to migrate will depend on the level of investment, planning and resources'.<sup>17</sup>

(12) We discuss these issues at greater length in Chapter 2. For a more comprehensive treatment of the subject, see OGB, *Water Stress, Climatic Changes and Migration in the Indus Delta*. Unpublished Document, 2010. (13) Stephan Faris, *Forecast. The Surprising and Immediate Consequences of Climate Change*. (New York: Halt, 2009), 5-19. (14) Cited in Faris, 15. (15) Ban Ki Moon, "A Climate Culprit in Darfur," *The Washington Post*, Saturday, June 16, 2007. UNHCR has also admitted that 'immediate causes of forced displacement', for example, in the form of armed conflict, may overlap with 'economic marginalization and poverty, environmental degradation, population pressures and poor governance. See, UNHCR, *Note on International Protection 2001*. A/AC.96/951. Para 11. (16) Foresight: *Migration and Global Environmental Change (2011) Final Project Report*. The Government Office for Science, London. 9. (17) Cited in Frank Biermann and Ingrid Boas, "Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees," *Global Environmental Politics*, vol 10, no 1, (2010): 60-88.



Significantly, migration itself may be an adaptation strategy undertaken by individuals or communities on their own initiative or as part of state policy in anticipation of impending climate-related crises. That is most likely to happen in the case of slow-onset resource degradation or recurrent extreme events. In many cases, appropriate adaptation measures, such as livelihoods diversification, may serve to minimize the need for migration. Where in situ adaptation measures do not work, people might be left with no option but to settle elsewhere.

### 1.3 Climate Change and Migration Hotspots

Regions of the world where the impacts of climate change are likely to be greatest in intensity and magnitude can be considered 'hot spots' for climate-related migration. That is not to suggest that entire populations of affected regions can be expected to migrate. Some research on the extent of climate-related migration falls into the tarp

of simply projecting the numbers of potential migrants on to the populations of areas most vulnerable to the impacts of climate change.<sup>18</sup>

Some studies, such as the one produced by UK Government's Foresight Programme (hereafter Foresight Report), discuss the interplay between migration and climate change within the context of three 'vulnerable' ecological zones namely, low-elevation coastal zones, global drylands and mountain regions (See Box 1).<sup>19</sup> However, as the Foresight report itself recognizes, identification of these migration and displacement 'hotspots' must not collapse into an 'environmentally deterministic approach', implying that appropriate responses may have a huge influence on whether people migrate or adapt locally.

While recognising the need for more nuanced context-specific analyses, we can safely suggest based on existing research

#### Climate Change and Migration: Vulnerable Ecological Zone Identified by the Foresight Report

**Low-elevation coastal zones:** A rise in sea level, changes in tropical storm and cyclone intensity, changes in rainfall regimes, changes in ocean chemistry and degradation of coastal/marine ecosystems will affect low -elevation coastal zones, which are home to 10% of the world's population as well as being amongst the most dynamic places on earth in terms of urbanisation and economic change

**Global drylands:** Changes in rainfall regimes, increases in temperature, changes in crop productivity and land degradation will affect drylands. The combination of rising populations, political turmoil, land degradation and recurrent drought is a major challenge for their estimated population of two billion 55 at least half of whom are considered to be directly dependent on natural resources, while 250 million are already affected by land degradation

**Mountain regions:** Changes in rainfall regimes, increases in temperature, changes in crop productivity, land degradation and increased glacier melt will affect mountain regions where livelihoods still depend to a great extent on the use of natural resources. Nearly three -quarters of mountain people live in rural settings where a series of 'mountain specificities', including inaccessibility, fragility and marginality, increase vulnerability.

-Box 1 (Source: Foresight Report, pp 55 -6)

(18) For a discussion of such generalized estimates, see Samudu Atapatu, "Climate Change, Forced Migration and International Law", 27 Wisconsin International Law Journal 607 (2009-2010): 610-13. (19) Foresight: Migration and Global Environmental Change (2011) Final Project Report. The Government Office for Science, London. 55-6.

that most climate-related population movement will originate from Asia and Africa.<sup>20</sup> Asia is at high risk of extreme weather events and sea-level rise, and will also be severely affected by drought and water scarcity. Africa is especially vulnerable to drought and water scarcity, but many regions are also at high risk of sea-level rise. Latin America is especially at risk of water stress and drought. Small islands, such as Tuvalu in the Pacific and the Maldives in the Indian Ocean will be highly affected by even a moderate sea-level rise, even though the scale of outmigration is likely to be small due to low population of these islands.<sup>21</sup> Densely settled deltas, low-lying coastal areas, river valleys and certain mountainous areas experiencing glacier retreats, and semi-arid low-humidity areas are ecological locations where the link between climate change and migration is likely to be apparent. Large majority of those migrating or getting displaced on account of the impact of climate change are likely to remain within their countries of origin but cross-border population movement cannot be ruled out.

Again, it has to be remembered that the vulnerability of people living in these hotspots is more a function of their socio-economic status, livelihood patterns, and availability of resources for adaptation rather than the impact of climate change per se. Within these hotspots, the mobility response may vary from short-term seasonal migration to longer-term permanent migration to urban centres depending again not only on ecological conditions but social realities. Gender as a cultural norm and as an organising principle for division of labour will determine possibly differential mobility responses for men and women in some contexts.

#### 1.4 Classifying Climate-related Population Movements

In some of the literature on the impacts of climate change, all population movement occurring on account of climate-related factors is characterized as 'displacement'. Some employ the term 'environmental refugee' or 'climate refugee' to denote those forced to move as a result of climate change.<sup>22</sup> The United Nations Agency for Refugees (UNCHR) and International Organisation for Migration (IOM) have expressed reservations about the use of the term 'refugee', which on their interpretation, can only be applied to those expressly falling within the purview of the 1951 Convention on the Status of Refugees and its 1967 Protocol.<sup>23</sup> The underlying issue is the degree of voluntariness in the decision to move as well as the role of the State in triggering migration.

Climate-related migration, it is our contention, is especially hard to slot into a category due to the complexity and multiplicity of drivers involved. Categorizing all climate-related population movement as involuntary migration or displacement serves to homogenize different forms of human mobility and undermine the element of agency. At the same time, classifying all those on the move due to climatic factors as 'voluntary' or 'economic' migrants overlooks underlying political and policy issues that compromise 'voluntariness' in the process of migration. It is much more useful, we shall argue, to conceptualize climate-related migration on a spectrum from the relatively soft-end of voluntary migration-perhaps as a planned adaptation measure-to the hard end of forced migration, sometimes involving conditions where an individual is forced to cross borders due to State persecution and discrimination on account of an individual's 'race, religion, nationality, political opinion or membership of a particular social group'.<sup>24</sup>

(20) Biermann and Boas, 69. (21) Ibid, 69. (22) See for example, Frank Biermann and Ingrid Boas, "Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees," *Global Environmental Politics*, vol 10, no 1, (2010): 60-88.(23) UNHCR, "Summary of Deliberations on Climate Change and Displacement". *International Journal of Refugee Law* Vol. 23 No. 3 (2011): 561-574. 562. (24) According to the 1951 Convention relating to the Status of Refugees, as modified by the 1967 Protocol, a refugee is a person who 'owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside his country of nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country'. Art 1(2) of the 1951 Convention amended by Art 1 (2) of the 1967 Protocol relating to the Status of Refugees. The amendment removed the temporal limitation, which defined a refugee in relation to 'events occurring before 1 January 1951'.



## 2. Nature and Scope of Climate-Related Migration

Climate change-related stressors that might trigger or influence human mobility are usually divided into (a) Relatively sudden extreme events, such as hurricanes, tropical cyclones, flash floods and glacial lake outburst floods or GLOFs (b) Gradual or slow-onset resource degradation in the form of desertification, water-stress, coastal erosion, saltwater intrusion and climate-related morbidity. So-called slow-onset disasters might also lead to violent conflicts or feed on existing conflicts, thus forming another potential driver of mobility. Certain State-led interventions, such as building of new dams to manage flooding or generate energy to respond to climate change may also trigger population movement. In the case of sinking island States, relocation of entire populations has been widely discussed in relevant literature, and forms a relatively different scenario on account of the level of official planning and international cooperation involved. Our discussion in this section will revolve basically around the two sets of primary drivers or stressors i.e. slow-onset phenomena and extreme events.

To avoid oversimplification, we shall begin by drawing on some conceptual models and theoretical accounts that have sought to make sense of environmental migration, and migration in general, inquiring as to what factors prompt human mobility and how mobility responses vary from one context to another. This will be followed by a discussion of the link between migration and adaptation and environment-related migration in Pakistan.

### 2.1 What Drives Migration?

As we have already suggested, the relationship between climate change and

human mobility is much more complex than a simple climate stressor equals migration/displacement nexus. That holds true even for sudden extreme events like tropical cyclones and floods. Researchers have pointed out with reference to Hurricane Katrina, for example, that it 'was government policies and practices' that 'drove the displacement process'.<sup>25</sup> And as the IPCC has observed, 'while physical exposure can significantly influence vulnerability for both human populations and natural systems, a lack of adaptive capacity is often the most important factor that creates a hotspot of human vulnerability'.<sup>26</sup> In some contexts, 'natural disasters' do not lead to outmigration of the most vulnerable as they usually do not have the resources required to finance the journey.

To begin with a simple explanatory model adapted from Richmond, we have to recognise first of all that certain contexts are more susceptible to environmental disruptions or climate-related stressors.<sup>27</sup> For communities living along riverine flood plains, for example, proximity to a source of hazard constitutes one predisposing condition. Poverty, which forced them to settle in such precarious locations and lack of protective dykes, would represent another set of (non-environmental) conditions predisposing them to move once a precipitating event-in this case floods-occur. One example of this is in Bangladesh, where poor populations are forced to live in flood-prone areas of the delta. Another example is the low-income earners in Rio de Janeiro, who are forced to live in housing located on unstable slopes, as well as poor renters in buildings that are not reinforced against earthquakes.<sup>28</sup>

(25) Warner, 696. On the same topic also see, James R. Elliott and Jeremy Pais, "Race, Class, and Hurricane Katrina: Social Differences in Human Responses to Disaster," *Social Science Research* 35 (2006): 295-321.

(26) IPCC Fourth Assessment Report: Contributions of the Working Group II. [http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4\\_wg2\\_full\\_report.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf) p 317.

(27) Cited in Graeme Hugo, "Environmental Concerns and International Migration", *International Migration Review*, Vol. 30, No. 1, Special Issue: Ethics, Migration, and Global Stewardship (1996): 105-131, 111. (28) John Handmer, Elsie Loh, and Wei Choong, "Using Law to Reduce Vulnerability to Natural Disasters," *Georgetown Journal on Poverty Law & Policy*, Volume XIV, No. 1, (2007): 17

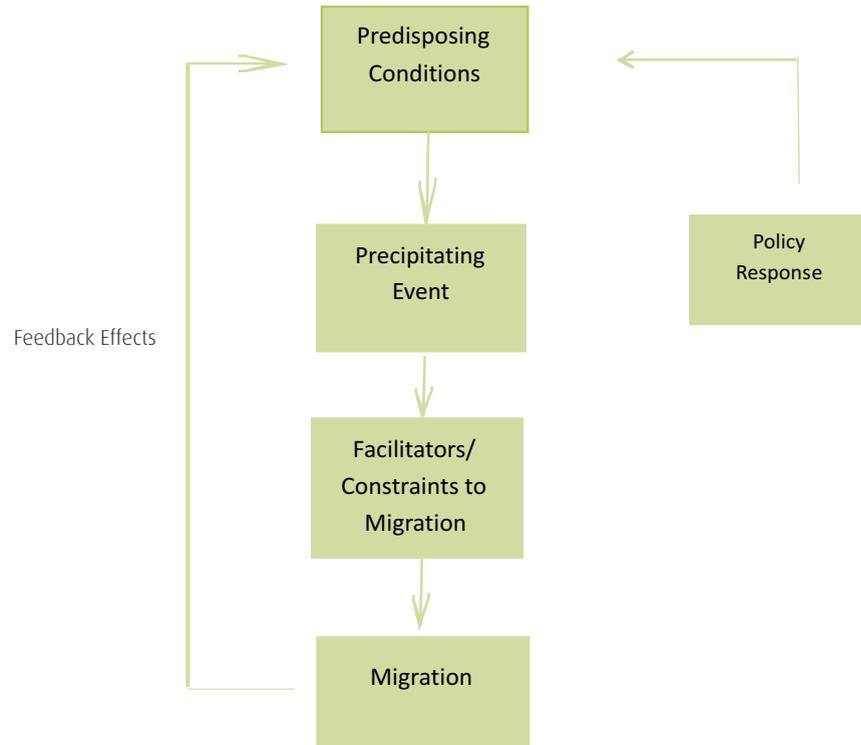


Figure 1: Richmond's Model of Environmentally-induced Migration

While the magnitude of a precipitating event has a bearing on how many people decide to move, the idea that so-called natural disasters are great equalizers affecting everyone in their range has proven to be a myth. For example, in Pakistan's desert region of Tharparkar, certain historically mobile castes tend to migrate more often than others when faced with drought. Caste relations and norms in this case are a significant predisposing condition for migration. To draw on Amartya Sen's work, we could also argue that a lack of 'exchange entitlements' might be a more important driver of outmigration than the failure of precipitation per se.<sup>29</sup> On Richmond's model, mobility is shaped not only by predisposing conditions but by a range of constraints and facilitators to migration which exist in the area affected. As Hugo has explained, 'these include the existence or lack of escape routes not only in the form of transport networks but

also kinship and social networks which mean that some environmental migrants can move to an area where they have relatives and friends who can support them'.<sup>30</sup>

There is a strong body of research in the field of migration that goes under the rubric of Social Networks Theories, which focuses on elements that perpetuate migration even if the initiating forces have waned or disappeared. The social networks are ties between migrants and their relatives and neighbors in the places of origin, networks that reduce the risk and lower the cost of further migrations and thereby perpetuate them and even increase their volume.<sup>31</sup> For example, the emigration of a large numbers of Pakistanis from Kashmir's Mirpur district to the United Kingdom in 1960s was initially in response to the construction of Mangla Dam.

(29) Amartya Sen, *Development as Freedom*. (New Delhi: Oxford University Press, 2011), 37-9.

(30) Hugo, 110. (31) For an overview, see Castles Stephens and Miller Mark J, *The Age of Migration. International Population Movements in the Modern World*. (New York: Palgrave Macmillan, 2003).



Relatively open immigration policy in the UK for former colonies at that time served as a facilitator to mobility. The process of migration, however, continued for many years after the precipitating event (construction of Mangla Dam) as friends and family of early migrants followed suit. Researchers working specifically on climate change-related migration also endorse the view that 'other things being equal, mobility is likely to be seen more as an option in communities with a history of movement and active migration networks'.<sup>32</sup>

In the case of climate-related sudden disasters or resource degradation as well as development projects or ill-conceived adaptation measures, policy response is an equally important determinant of the nature of population movement. Where humanitarian aid is available outside the location of a disaster, for example, it is more likely to generate outmigration other things being equal.<sup>33</sup>

Finally, Richmond's model draws attention toward feedback loops between migration and the conditions in the places of origin. For example, real or perceived gaps in rebuilding and rehabilitation measures in the aftermath of floods or cyclones might impinge on whether the displaced decide to return. Some may decide to settle elsewhere permanently providing an incentive to those who did not move in the first place to migrate as well. However, recent experience, such as the 2004 Asian Tsunami, suggests that those displaced as a result of extreme events usually return to where they belong to rebuild their lives.<sup>34</sup>

Where the deterioration in environment is gradual and cumulative, the migration response is more complex. For one, it allows

time for planning and testing out various coping strategies before a decision is made to migrate. Additionally, unlike sudden extreme events, where entire families and communities have to relocate to ensure immediate survival, in the context of slow-onset changes in the environment, only some members of a family might migrate to provide a 'safety net' by opening up alternative livelihood opportunities and allowing remittances to be sent back home to family members.

To account for mobility responses in varied climate change contexts, a conceptual framework employed by the Foresight Report, referred to earlier, provides a useful analytical tool. It lends itself more to understanding migration as adaptation as distinct from survival migration or displacement that occurs in the aftermath of disasters. In the latter cases, there is often inadequate time for planning even though the relevance of extraneous factors and predisposing conditions to population movements discussed above will still be relevant. The Foresight model looks at a range of macro-level drivers and not just environmental and climate change stressors which interact with meso-level legal, political and social context as well as micro-level conditions within households and communities to influence the decision to migrate. The model combines the classical structural accounts of migration, which focus on push and pull factors with a full range of contextual realities.<sup>35</sup>

At the core of the process is the real or perceived variability between the place of origin and destination. While 'push factors' dominate the process of mobility in certain cases, for example, where the sheer intensity of an environmental event or the scale of discrimination suffered pushes an

(32) Graeme Hugo, *Climate Change-Induced Mobility and the Existing Migration Regime in Asia and the Pacific*, in *Climate Change and Displacement. Multidisciplinary Perspectives*, ed. Jane McAdam, 9-36, 20. (Oxford: Hart, 2012). (33) The insight is drawn from conversations with relief workers and disaster management officials with experience working in the aftermath of 2005 earthquake and 2010-11 floods in Pakistan. (34) *Ibid.*, 14. (35) For an overview classical structural accounts of migration, see C H Wood, "Equilibrium and historical-structural perspectives on migration", *International Migration Review*, Vol 16, No 2, (1982): 298-319.

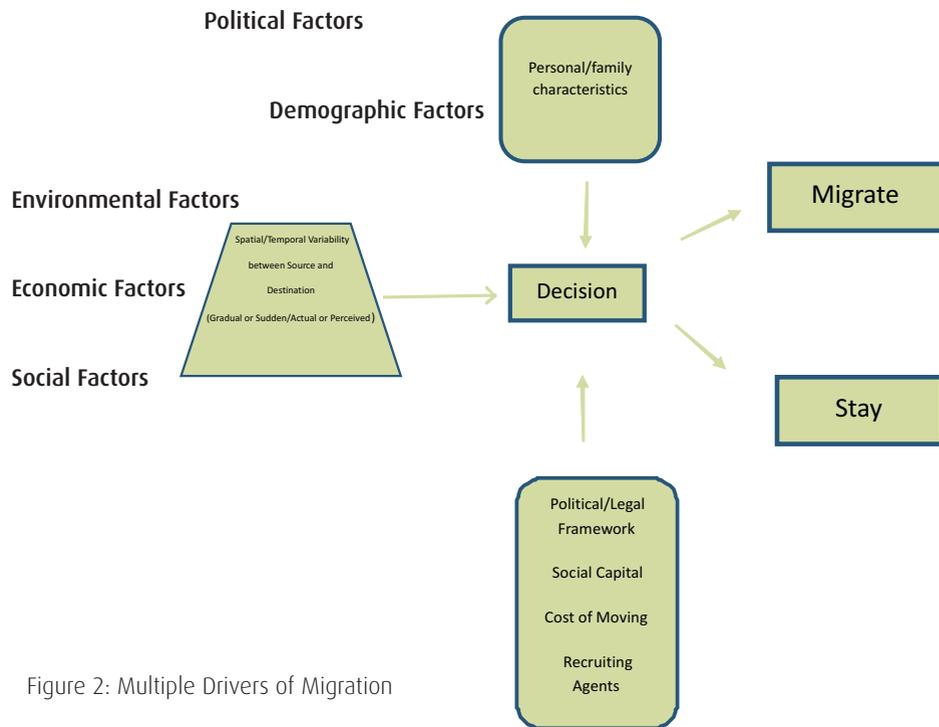


Figure 2: Multiple Drivers of Migration

individual or a group to a destination. Such conditions are characteristic of what might be legitimately termed 'forced migration' or 'displacement'. In most cases, however, there is some knowledge or expectation of better conditions and opportunities elsewhere, which lie at the heart of the decision to move. As the figure clearly suggests, environmental and climate change factors will seldom determine mobility in isolation of other factors. For example, demographic pressure might make it more difficult for local populations to ride out prolonged droughts (climate/environmental factors) leading to outmigration. Similarly, economic factors may drive population out of an area if, for example, high unemployment does not allow people dependent on threatened ecosystems for their livelihoods to branch out into other occupations. Conversely, actual or perceived availability of such opportunities elsewhere would serve as a pull in the migration process.

The decision to move is still filtered through individual or household characteristics (micro-level factors) and the kind of legal and institutional mechanisms available to support or hinder mobility. Research on labour migration suggests that those opting to move are more likely to be single and young. Similarly, despite a global trend toward feminization of migration, in societies like Pakistan, women are still unlikely to migrate individually in search of work due to prevailing gender norms. A gendered perspective on migration will also require us to recognise social and psychological pressures women are made to bear in some patriarchal societies when their husbands and male family members undertake long-distance and long-term migration.<sup>36</sup>

Social networks at destination, as we have already mentioned, may facilitate the process of migration by reducing social and economic costs for new migrants. In the

(36) Solidarity Centre, Migration-Trafficking Nexus. The Case of Pakistan. (Unpublished: 2009) 33. (Referring to fieldwork by Karen Siegman in the North West Frontier Province for Sustainable Development Institute).



case of external or international migration, the role of recruiting agents can be highly influential. For example, the distribution of overseas employment promoters (OEPs) in Pakistan is known to be concentrated in towns, which produce highest numbers of emigrants.<sup>37</sup> At the meso-level, costs involved in the process of migration affect who migrates and to what place. In the case of both slow-onset disaster and sudden disasters, it has been correctly suggested in the light of historical environment-related migration, that the most vulnerable are not the ones who will necessarily migrate as they might not have financial and social capital to support migration.<sup>38</sup>

While rural-urban migration is increasing globally in many situations because of environmental change-rural livelihoods being fundamentally linked to the environment-the response varies widely from one region to another. A survey from the island of Hatia, coastal Bangladesh, found that 22% of households used migration to cities as a 'coping strategy' following tidal surges, and 16% following riverbank erosions. Similarly, a cross-country analysis of determinants of urbanisation in sub-Saharan Africa suggests that deteriorating rainfall conditions increase rural-urban migration. In contrast, however, evidence from Mali during droughts showed that people who have been affected by drought are less able to afford to migrate to cities.<sup>39</sup> Some studies suggest that in times of environmental crises, poor households seek to protect their limited assets rather than expend capital on the costly process of moving.<sup>40</sup> Within the context of climate change, the decision to defer to migration may be seen as a result of high 'adaptation cost' involved.

Legal and policy framework may be equally important in determining the extent of migration and routes taken. The fact that

much of climate-related migration is likely to be internal is, at least in part, rooted in restrictive immigration policies for low-skilled workers, especially in the industrialized West. These policies include what are commonly referred to as non-entrée measures, such as exorbitantly high visa costs and pre-departure screening to preempt 'labour migration'.<sup>41</sup> Where environmental and other drivers constitute particularly strong push factors, some individuals and groups might be forced to adopt irregular channels leading them into conflict with law and rendering them vulnerable to exploitation. Pakistani migrant workers in the Gulf, research has revealed, have sometimes been forced to hire the services of human smugglers to avoid higher costs involved in migrating through official channels.<sup>42</sup>

The degree of willingness to migrate will also vary from context to context. Some may decide to stay back despite the presence of climate-related and other drivers due to higher absorbing capacity. For example, land-ownership has been found to have a negative co-relation with seasonal migration in dry seasons in parts of Pakistan.<sup>43</sup> Some sections of society may constitute what has been dubbed 'trapped populations' or those for whom barriers to migrating might be so insurmountable that they have to stay on despite the severity of environmental stressors.<sup>44</sup> The variety of eventual mobility responses are depicted in a simple figure on the next page:

Policy and legal responses, which we take up in some detail in the next chapter, are relevant every step of the way. Not only do they determine the decision to migrate or stay put, they impinge in significant ways on the outcome of the decision. For example, those deciding more or less voluntarily to move to an urban centre for work may end up getting ghettoized if ethnic conflicts are not properly

(37) OGB (2010), 13. (38) UNDP, "Human Development Report: Overcoming Barriers: Human Mobility and Development", 128-9. <http://hdr.undp.org/en/reports/global/hdr2009/chapters/> (39) Jonathan Esnor, *Uncertain Futures. Adapting Development to a Changing Climate*. (Rugby, Warwickshire: 2011), 90-1. (40) *Ibid*, 92. (41) For an overview of carrier sanctions and other non-entrée measures, see Guy S. Goodwin-Gill and Jane McAdam, *The Refugee in International Law*. (Oxford: Oxford University Press, 2007 3rd edn), 377. (42) Solidarity Centre, 21-7. (43) This is due to the fact that having your own land sometimes allows you to live off timber through the dry spell. See OGB, *Socio-economic Impact of Low Monsoon Rainfall in Selected Arid Regions of Pakistan*, Unpublished Report, 2013. 37. (44) Foresight, 14-15.

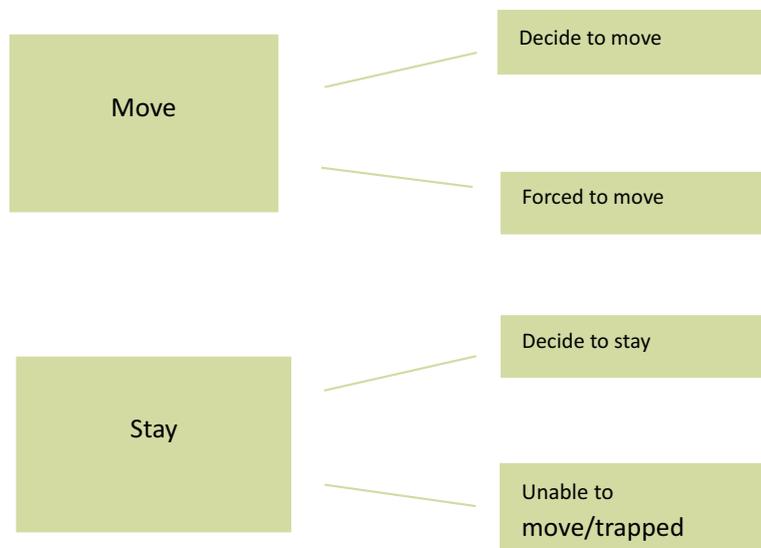


Figure 3: Mobility Outcomes in the Context of Climate Change

managed as the cases of two of the largest cities of South Asia-Karachi and Mumbai-so painfully reveal. Rural migrants and immigrants with 'irregular' status are also vulnerable to exploitation and may end up living in hazard-prone informal settlements.<sup>45</sup> When migration exposes individuals and societies to new threats, it could be seen as a form of 'maladaptation', as we discuss shortly. Where climate-related migration lacks voluntariness, those forced out of their places of origin might find themselves in a legal black-hole if domestic or international law is silent or ambiguous on their status.

### 2.2 Migration and Adaptation: Unpacking the Link

A sociologically and historically grounded understanding of human mobility that we have advanced so far gives us strong reasons to take as a given that climate or environmental change per se does not determine patterns and outcomes of migration. Barnett and Webber illustrate this fundamental fact by comparing the response

of farmers in Australia and in North Ethiopia to 'climatic variability'. Farmers in Australia, they explain, do not suffer hunger and do not resort to migration as 'a coping strategy' in the same way as Ethiopian farmers do where poverty and institutional failures trigger migrations.<sup>46</sup> Population movements then can be seen as an effect of climate change as well as an 'adaptation' response. At the same time, where measures are in place to adjust to a climate hazard (for example, food stocks, crop-insurance and alternative means of livelihood in the case of Australian farmers) likelihood of migration can be reduced through what is sometimes called, 'in situ adaptation'. Physical adaptation measures are already helping to prevent displacement in Bangladesh, such as where people have developed indigenous knowledge to raise their houses on plinths, protected their houses or land with flood defenses, or adjusted their farming techniques by using flood-resistant strains of rice or by developing 'floating gardens' to deal with water-logging.<sup>47</sup>

The IPCC defines 'adaptation' as 'adjustment in

(45) The term 'irregular' migration refers to cross-border movement where migrants enter a country without legal authorization in the form of a valid visa or permit. Sometimes, the term 'illegal migrant' is used to describe the status of such individuals. We find the terms 'irregular migrant' or 'undocumented migrant' more humane and less derogatory compared to 'illegal'. (46) Jon Barnett and Micael Webber, *Migration as Adaptation*, in *Climate Change and Displacement. Multidisciplinary Perspectives*, edited by Jane McAdam, 37-56, 38. (Oxford: Hart, 2012). (47) IDMC, *Monitoring Disaster Displacement in the Context of Climate Change*, Findings of a study by the United Nations Office for the Coordination of Humanitarian Affairs and the Internal Displacement Monitoring Centre, September 2009, p 12.



natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities<sup>48</sup>. The definition goes on to distinguish various types of adaptation, 'including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation'. A key concept in understanding climate change adaptation is 'vulnerability', which is increasingly being used in analysing disasters and in challenging the notion that disasters are 'natural' and neutral phenomena. Reducing vulnerabilities is an important component in pre-empting forced migration or displacement and recognition of pre-existing vulnerabilities is essential in managing migration as an adaptation strategy, as we elaborate shortly.

The concept of vulnerability is itself a contested one and is defined in various ways. Some tend to equate vulnerability with poverty. Others insist on expanding it to include social marginality and exclusion.<sup>49</sup> Women, for example, are at a greater risk of being affected by certain climate hazards (for example, landslides) where there are restrictions on their mobility. Similarly, certain social groups, such as 'irregular migrants' are more likely to suffer as a result of flooding since they are often excluded from official disaster risk reduction efforts. What is clear is that disasters act as a magnifying glass to the systemic social problems that already exist within the affected communities and determine varied levels of vulnerability. As Handmer et al have argued, 'where poverty already exists, the gap between the rich and the poor becomes more prominent', as evinced by the disproportionate impact of 'natural hazards' on the poor and marginalized groups.<sup>50</sup> The differences in the impact lie in the complicated intermix of social, economic and political factors which existed in the

community long before the disaster event.

Recent fieldwork in Pakistan's arid regions in the wake of failed monsoon rains, for example, revealed that landless farmers were more likely to migrate in search of farm-work in irrigated areas in dry seasons compared to those who own land and other assets, such as cattle.<sup>51</sup> On the surface, such seasonal migration can be seen as an 'adaptation measure'. However, considering that most farmers belonging to lower castes said they had no option but to leave in search of work, and that many of them ended up accumulating debts in the process of financing their journey, such migration seems akin to what IPCC has termed 'maladaptation'.<sup>52</sup> Alternatively, it could be argued, that 'adaptation costs' are undesirably high for this particular 'adaptation strategy'. While seasonal migration may have allowed some to ride out the dry spell, it actually pushed many deeper into poverty thus reducing their ability to deal with future disasters. Interestingly, many households who had a family member working as a skilled-labourer in an urban centre reported a reduced tendency to migrate during dry seasons as they had a 'secure' source of income (remittances) to rely on.<sup>53</sup>

Sometimes, the terms 'adaptation' and 'coping' are used interchangeably to define measures, such as seasonal migration. Schipper and Burton, however, have argued quite persuasively that coping strategies are not the same as adaptation. 'Too much coping', on this view, implies that 'livelihoods are not sustainable'. They suggest that short-term responses can ultimately lead to depletion of assets, which can lead to increased vulnerability to hazards. 'If people are forced to continuously cope, then they are dealing with chronic problems', Schipper and Burton assert in what is intuitively a very apt description of the kind of exploitative forms of

(48) IPCC, "Glossary of Terms used in the IPCC Fourth Assessment Report" [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_appendix.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_appendix.pdf) (49) Canon, 303. (50) Handmer et al, 14. (51) OGB (2013), 36 (52) IPCC, "Glossary of Terms used in the IPCC Fourth Assessment Report" [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_appendix.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_appendix.pdf) Migration experiences in Pakistan, however, are varied. Some farmers with well-established relationships with land-lords in irrigated areas based on reciprocity use seasonal migration to their advantage. (53) OGB (2013), 5, 29.

Vulnerability Reduction	Strengthening Absorbing Capacity/Resilience	Building Adaptive Capacity
-Improving food security through water-efficient agricultural strategies	-Planting a diversity of seed varieties to address uncertainty in forecasts	-Enhancing literacy, skills and critical consciousness
-Reducing coastal erosion through coastal planting	-Seed bulking and saving to secure traditional productive resources	-Creating gender equality, including freedom for women to migrate
-Building protective walls to prevent inundation	-Introduction of alternative livelihoods	-Knowledge of climate change and potential migration destinations
	-Access to institutional sources of credit to finance seasonal migration	-Ability to experiment with new technology and crop varieties
	-Secure land-tenure systems	-Participation in governance and public institutions
	-Crop insurance	-Stronger and informed collective action
	- Better access to public health and nutrition services	-Enhanced social capital

migration sometimes witnessed by some communities in parts of rural Pakistan as discussed in the next section.<sup>54</sup>

Jonathan Ensor has made a helpful distinction between 'vulnerability reduction', 'strengthening absorbing capacity' and 'building adaptive capacity'. On this account, while vulnerability is generally analysed with reference to a particular hazard, for example, vulnerability to droughts, 'absorbing capacity' or resilience refers to the ability to absorb shocks in relation not only to known hazards but with regard to uncertain future conditions as well. Ensor defines 'adaptive capacity' as people's ability to make changes in their lives, to experiment and make imaginative decisions. Absorptive and adaptive capacity, he explains, are not independent of vulnerability. Rather they help reduce 'vulnerability to the broadest possible range of hazards'. The following table, adapted from Ensor, highlights the relevance of 'migration support' as a possible element in strengthening absorbing capacity and building adaptive capacity.<sup>55</sup>

The above framework, despite some obvious weaknesses, helps us move away from drawing a line between 'adaptation' and 'migration' and situate migration within a spectrum of adaptive possibilities. Vulnerability reduction measures and those aimed at building absorbing and adaptive capacity could potentially reduce the prospect of displacement and forced migration and help avoid high adaptation costs in the process of migration. Successful migration, in turn, can contribute to adaptation by building financial, social and human capital in the form of remittances, new social networks and transfer of knowledge. The concept of 'adaptive capacity' also helps draw out the potential for new inequalities emerging within the context of climate-related migration and adaptation in general. For example, disparities in terms of skills and education within Pakistan would mean that only some individuals and groups would be able to cross borders legally given the increasing tendency among developed countries to limit immigration opportunities to the highly-skilled.

(54) E. Lis F. Schipper and Ian Burton, Understanding Adaptation: Origins, Concepts, Practices and Policy, in The Earthscan Reader on Adaptation to CC, ed. Schipper and Burton, 1-8, 3. (London: Earthscan, 2009). (55) Ensor, 5-7.



While a useful tool to guide understanding and action for community-based adaptation with migration concerns built in, Ensor's conceptualization does not adequately capture processes and factors that determine vulnerability conditions and limits on adaptation, including migration. To do that, we have to be aware of power relationships and institutional factors operating in the wider political and economic context, which we highlighted in the previous section while discussing multiple drivers of migration. For example, debt crises or lack of public funding could seriously constrain vulnerability reduction measures, such as construction of dykes and protective walls.<sup>56</sup> Similarly, ethnic and sectarian conflicts in urban centres could reduce the room for rural to urban migration as a positive form of adaptation. The First IPCC Report reflects this understanding where it states that effective or efficient adaptation requires state intervention.<sup>57</sup>

Finally, even as endorse the usefulness of 'vulnerability' as a tool which enables normative analysis of climate-related risks, including the risk of forced or maladaptive forms of migration, a word of caution is in order with regard to how the concept is employed in public discourse. In her discussion of media depiction of Small Island State of Tuvalu, which is threatened by sea-level rise, Carol Farbotkohas has pointed out that the term 'vulnerability' is sometimes used in ways that are 'conducive to a loss of confidence as it focuses on weaknesses and shortcomings rather than inherent strengths and opportunities'.<sup>58</sup> The 'rhetoric' of vulnerability, she argues based on a content analysis of Australian newspapers, has muffled the opportunities for adaptation in Tuvalu by focusing attention on relocation of people at risk. It has served to construct an identity of the island people as tragic victims. In contrast to this 'vulnerability imagery', many local people view migration is a 'long-established and accepted characteristic of island life'.<sup>59</sup>

### 2.3 Climate Change and Migration in Pakistan: Looking Ahead by Looking Back

Pakistan is burdened with a high level of exposure to climate change-related hazards on account of its geography. Fresh water resources of Pakistan are based on glacier melt and monsoon, both of which are sensitive to climate change. There is evidence that glaciers in the Himalayas are receding faster than in any part of the world.<sup>60</sup> In addition to increasing the chances of GLOFs, glacier retreat is likely to contribute more water and silt flow into rivers before eventually disappearing altogether. There is evidence of an increase in the area averaged mean annual temperatures of 0.57 Celsius over the period 1901-2000. Summer temperatures have reportedly increased in all parts of Pakistan during 1951-2000.<sup>61</sup>

Precipitation trends show 10 to 15 % decrease in coastal belt and arid plains over the last 40 years and an increase in summer and winter precipitation in Northern Pakistan. Some experts believe that the devastating floods of 2010, the worst in living memory, were consistent with predicted climatic changes. According to Director Pakistan Meteorological Department (PMD), 'there has been a latitudinal shift in the monsoon rainfall'. 'What was exceptional about the 2010 monsoon was that it was centered so far up in the north in the region which has historically been outside the monsoon belt, Khan went on to explain, 'if the rains had occurred over the central plains as in the past, the deluge would have been absorbed by four or five rivers'. Sadly, the downpour went into the Indus and inundated vast areas from the Northern Alpines to the plains of Punjab and Sindh. When people were just starting to recover and rebuild their lives, heavy monsoon rains triggered flooding in Southern Pakistan in August 2011 despite the forecast of low rain-fall. According to a World Bank assessment, 9.6 million people were affected in Sindh and Balochistan.<sup>63</sup>

(54) E. Lis F. Schipper and Ian Burton, *Understanding Adaptation: Origins, Concepts, Practices and Policy*, in *The Earthscan Reader on Adaptation to CC*, ed. Schipper and Burton, 1-8, 3. (London: Earthscan, 2009). (55) Ensor, 5-7.

**Lessons from 2010-11 Floods (Box 2)**

Given the scale of floods that inundated almost a fifth of the country during 2010, and vast parts of Sindh and Balochistan provinces during 2011, it would be far-stretched to claim that ensuing population displacement could have been avoided. The extent of displacement, however, could have been lower with appropriate protective measures in place. For example, as has already been mentioned, some villages in Dera Ismail Khan District that the present author visited escaped inundation and displacement due to the presence of protective walls. Similarly, in some cases, such as the Northern Areas of Pakistan, it was reported that communities living along the riverine belt happened to be the poorest and bore the brunt of displacement most during 2010 floods. A paper by Internal Displacement Monitoring Centre (IDMC) and Norwegian Refugee Council (NRC) observes that families with financial resources were able to move toward major towns and well-managed relief camps, whereas those unable to move further afield stayed on nearby embankments.

In terms of response, the compensation provided to flood affected population and displaced through a debit card (Watan Card) was instrumental in 'reactivating local markets' as reported by the Humanitarian Response Index (HRI). However, there were complaints about cards not being issued in time and illiterate individuals being charged an unauthorized commission to receive a card. There were also reports that the Watan Card was used by authorities to manipulate people into returning to their villages, when many of them would have preferred not to. The fact that far less women compared to men have National Identity Cards was also seen as having prevented many women from receiving the Watan Card. Absence of functioning District Disaster Management Authorities (DDMAs) is reported to have led to poor coordination at the grassroots level.

The overarching lessons for future include an enhanced focus on disaster risk reduction through construction of protective walls and dykes, greater levels of accountability and transparency in disaster management, and a focus on gender equity and enhanced levels of literacy as some of the ways of humanizing disaster-related displacement.

**Note on Sources:**

The author undertook fieldwork in Dera Ismail Khan region in December 2012 as part of an assessment of a UK-AID funded Programme, called Voice and Accountability. Full citations to the two studies referred to are given below:

-IMDC/NRC, Briefing paper on Flood-displaced women in Sindh Province, Pakistan. Presented at the Nansen Conference on Climate Change and Displacement in the 21<sup>st</sup> Century; 5-7 June, 2011, Oslo, Norway.

-The Humanitarian Response Index, Focus on Pakistan- Lessons from the Floods. Available online at: [http://daraint.org/wpcontent/uploads/2011/12/HRI2011\\_Focus\\_on\\_pakistan.pdf](http://daraint.org/wpcontent/uploads/2011/12/HRI2011_Focus_on_pakistan.pdf)

Summarizing the impact of successive floods, Pakistan Economic Survey (2011-12) noted that 'both events demonstrate changing climate and weather pattern in the region and their intensity of recurrence'.<sup>64</sup>

Crucially, Pakistan has an arid and subtropical environment with low levels of natural precipitation in overall terms. Average rainfall is under 240 millimetres (mm).<sup>65</sup> Over half the country receives less than 200 mm of annual rainfall. Precipitation is unevenly distributed over seasons and across regions. Nearly 81% of river flow and 65% precipitation occur during the three months of the monsoon season.<sup>66</sup> Thus, large parts of the country are prone to droughts, which on some accounts, have increased in frequency over the past few decades.<sup>67</sup> Sea level rise, although not as severe as in low-lying countries like Bangladesh, is still evident. According to the

National Institute of Oceanography (NIO) tide gauge records of Karachi harbour for the past 100 years show that sea level has raised at about 1.1 mm/year.<sup>68</sup>

Overall, projected trends suggest temperature increases in both summer and winter to be higher in Northern Areas than in South; increase in summer precipitation for both Northern and Southern parts of the country; increased frequency and intensity of extreme events such as heat waves, heavy precipitation, droughts and tropical cyclones. These long-term changes in the environment are likely to feed on to unsustainable agricultural and development practices and patterns of resource extraction, such as over-pumping of groundwater, deforestation and depletion of rangelands due to overgrazing. As the IPCC stated in its Fourth Assessment Report, 'climatic changes in Pakistan and Bangladesh would likely

(64) *ibid* (65) The World Bank, *Pakistan's Water Economy. Running Dry* (Karachi: Oxford University Press, 2006), xiii. (66) Oxfam Great Britain (OGB), *Migration Water Stress and Climate Change in the Indus Delta*. (Islamabad: Unpublished, 2010), 22. (67) Anjum S.A (et al), "An Assessment of Vulnerability, Extent, Characteristics and Severity of Drought Hazard in Pakistan", *Pakistan Journal of Science* Vol. 64 No. 2 June, 2012: 138. (68) Inam et al *Natural and Manmade Stresses on the Stability of Indus Deltaic Eco Region*. (Karachi: NIO). Year of Publication Not Mentioned.



exacerbate present environmental conditions that give rise to land degradation, shortfalls in food production, rural poverty and urban unrest. Circular migration patterns, such as those punctuated by shocks of migrants following extreme weather events, could be expected. Such changes would likely affect not only internal migration patterns, but also migration movements to other western countries<sup>69</sup>.

As we have consistently argued in this paper, the consequences of climate change are as much a function of political economy, governance and pre-existing societal realities as natural hazards, such as extreme weather events, failure of rains over long period and glacial retreats. In the context of migration, both forced displacement and as a form of adaptation, Pakistan is likely to showcase the interplay of environmental change and underlying social context, including historical patterns of mobility. Isolating environmental and climatic factors as the causes of sudden extreme events and ensuing population movements might be relatively simpler compared to slow-onset phenomena. We also know from past experiences in Pakistan and elsewhere in the world that displacement by sudden extreme weather or climatic events is typically internal, short-term, and across short distances. However, even there for a natural hazard to turn into a disaster, there have to be some tipping points present, as we argued earlier, and as witnessed during the 2010 floods. Despite the intensity and scale of the floods, there were villages, which escaped inundation, and consequently human displacement, due to the presence of protective walls, for example. Similarly, with regard to GLOFs and flash floods in Northern Areas of Pakistan in the upper Indus system, those intimately aware of local conditions,

believe that it is the poorest who are at the greatest risk of displacement as they build<sup>70</sup> homes right in the riverine belt and close to moraines, which are prone to fail when an ice rock melts or when an avalanche detaches.

In line with projected trends of changing climate, certain regions could be identified as particularly vulnerable to displacement and forced migration. These include areas within the fragile mountainous ecosystems in Himalayas threatened by glacial retreats; the Indus Delta and Karachi's coastal belt at high-risk of seawater intrusion and tropical activity in the Arabian sea; the Indus plains, which are vulnerable to floods and in longer-term to drought due to likely decline in river-flows; and eastern deserts, which have experienced and are prone to droughts. Increased water and heat stress in arid and semi-arid areas generally, as identified by Pakistan's Climate Change Task Force,<sup>71</sup> may also lead to increased levels of outmigration from districts, which are already known to produce large numbers of internal and external migrants.<sup>72</sup> Again, the mobility response in all cases is likely to be mediated by people's resources, absorptive and adaptive capacity, their past experience in dealing with environmental stress, and the underlying social context as well as the variables of class, caste, ethnicity and gender.

Before exploring some empirical evidence in relation to population movements in the wake of events and phenomena that appear consistent with projected climatic changes, it is essential to recognise that migration in Pakistan and the Indian subcontinent has historically had strong links with geography and environmental change. Historically, certain agrarian regions in eastern Afghanistan and the arid areas of the North West Pashtun region and arid Punjab produced surplus

(69) IPCC (2007), 488. (70) Interview with Ali Ahmed Jan, Director Sustainable Solutions. (71) Planning Commission, Government of Pakistan, Task Force on Climate Change-Final Report. February 2010.

<http://www.pc.gov.pk/usefull%20links/Taskforces/TFCC%20Final%20Report.pdf> xii (72) See, Gazdar Harris, "A Review of Migration Issues in Pakistan", Collective for Social Science Research, 17.

[http://www.researchcollective.org/Documents/A\\_Review\\_of\\_Migration\\_Issues\\_in\\_Pakistan.pdf](http://www.researchcollective.org/Documents/A_Review_of_Migration_Issues_in_Pakistan.pdf) Data maintained by Pakistan Bureau of Emigration for the period for 1981-2007 maintained on file by the present author shows that majority of emigrants belonged to twenty or so arid and semi-arid districts in addition to large cities like Karachi and Lahore where most employment promoters are based. Some of These arid districts include, Attock, Jehlum, Gujrat, Jhang and Rawalpindi in Punjab, and Dir, Mardan and Swat in Khyber Pakhtunkhwa province.

workers looking outside the subsistence village economy for work. Throughout the colonial period, there was a regular pattern of circulation of manpower for military service, trade and labour.<sup>73</sup> During 1880s, the British introduced canal-irrigation in what is now Pakistan's Punjab province and brought in peasants from east Punjab increasing the population by over 18 percent.

In the post-colonial period, the construction of Mangla Dam, as mentioned earlier in the report, was a watershed event in Pakistan's migration story. As one of the guarantors of the project, the British government offered to resettle in Britain those displaced from the project in Azad Kashmir's Mirpur District. The initial settlers from Britain helped a large number of friends and relatives follow in their footsteps and migrate to the United Kingdom. It is important to recognise the historical origins of this population flow to avoid characterizing all Kashmiris in Britain purely as 'economic migrants'. It is exactly this kind of pigeon-holing, which provides grist to xenophobic mills.<sup>74</sup> Looking into the future, just as the construction of Mangla Dam with the support of the British government necessitated a population shift, 'adaptation' measures in the context of climate change may lead to human displacement, where new dams are constructed, for example.<sup>75</sup>

Immigration of Pakistani workers to the Gulf following the oil boom in 1970s also had a link with environmental factors, which is seldom recognised. Apart from provincial capitals, Rawalpindi and the Makran region of Balochistan, most emigrants to the Gulf came from rain-fed, low agricultural income areas of the Western Highlands (Potohar in Punjab and central and upper North West Frontier Province, now called Khyber Pakhtunkhwa) re-

enacting a centuries-old pattern. Official data reveal a disproportionate share of some twenty districts in international migration from Pakistan, which mostly include arid regions of Punjab and the North West, apart from large urban centres such as Karachi, Faisalabad and Gujarat where a large network of overseas recruiters developed in response to high demand for overseas work in the Gulf.<sup>76</sup>

Arif Hasan, a leading commentator on migration issues, has suggested that those emigrating following the oil boom were not the poorest as it required substantial funds to finance your journey.<sup>77</sup> Initial emigrants again served as mini-recruitment agents and helped bring their relatives, friends and neighbours over. There also developed a clandestine market of illegal emigration where visas were sold between 15,000 to 30,000 rupees. Stories were heard of clueless intending migrants huddled under the trees or squatting on the ground outside the Karachi airport waiting for their turn to get on an airplane to Saudi Arabia. In recent years, there have been several cases of Pakistanis with irregular status being deported from United Arab Emirates and Saudi Arabia. Research suggests that increasing poverty and lack of livelihood options has increasingly driven many families in rural areas to take the risk of sending a family member abroad using an illegal channel. This trend indicates potentially high costs of migration as a coping mechanism or an adaptation strategy in the absence of facilitating factors.<sup>78</sup>

The areas of highest international migration from Pakistan have also tended to supply the largest number of internal migrants i.e. the areas where agricultural incomes are low and erratic depending on the rainfall. According to the 1998 Census, the last to be held in the

(73) Robert Nicholas, *A History of Pashtun Migration 1775-2006*. (Karachi: Oxford University Press, 2008), 3-4. (74) For a discussion of such xenophobic tendencies in Europe, see Gil Loescher, *Refugees as Grounds for International Action*, in *Refugees and Forced Displacement. International Security, Human Vulnerability, and the State*, eds. Edward Newman and Joanne van Selms, 31-49. 36. (Tokyo: United Nations University Press, 2003).

(75) The World Bank, for example, has already called for the construction of new dams in the light of current levels of water scarcity in Pakistan. See, *The World Bank, Pakistan's Economy Running Dry* (Karachi: Oxford University Press, 2005), xviii. (76) Solidarity Centre, 22. Also see supra note 69. (77) Arif Hasan with Mansoor Raza, *Migration and Small Towns in Pakistan*. (Karachi: Oxford University Press, 2011), 49. (78) Solidarity Centre, 21-3.



country, 8% of the total population comprised of migrants, migrants being defined as those who previously resided in another district within Pakistan or in another country. The census put the percentage of those who reported to have migrated from 'other countries' at 23.9% of the total 'in-country migration'. Significantly, the corresponding figure in 1981 census was as high as 40.5%. The data suggests that through the decades of 1980s and 1990s, the share of internal migrants in the total migrant population increased considerably, while the flow of foreign migrants-Bangladeshis, Burmese and Afghans-steadily declined. Leaving aside the migrants from other countries, the share of provinces in total in-country migration paints an interesting picture. The share of Khyber Pakhtunkhwa province, according to the 1998 census, comes to 14.6% of total internal migrants, even as it comprised 13.4% of the country's population. Punjab accounted for 55.6% of the country's population and produced 51.7 percent of internal migrants. Despite accounting for 23% of the national population, internal migrants from Sindh made up just about 10% of the total.<sup>79</sup> Balochistan, which made up 2% of the total population produced some 2.6% of all internal migrants. Remarkably, internal migrants from Federally Administered Tribal Areas (FATA), mostly settled in Karachi, made up 9.4% of the total migrants even though it comprised around 2.3% of the country's population in 1998.<sup>80</sup>

These trends suggest that much of internal migration has taken place from regions where there is immense pressure on land and resources and where industrialisation has been low. However, relatively low share of Sindh and Balochistan in rural to urban migration is indicative of the fact that 'under-development' alone is not a reason for people to move out of their district of origin into an urban centre. In the case of Sindh, one

explanatory factor is predominance of feudal relations in agricultural economy, where a substantial number of agricultural households work as tenant-farmers and are beholden to the farms they work. Equally crucial is the fact that relative lack of mobility in historical terms has prevented social networks to emerge within major urban centres for people of Balochistan and Sindh that could have facilitated subsequent waves of migrants. There are some signs that this is changing. Gradual breakdown of old relations of production and caste hierarchy, increased population pressure and development of roads and communication links have resulted in greater outmigration from villages into nearby towns. The desert region of Tharparkar in Sindh, which has experienced recurrent droughts and serious water stress as we discuss in one of our case studies shortly, has seen young men moving to Karachi to work in garment factories or as domestic workers since 1980s.<sup>81</sup> Remittances that these workers send back have saved many families having to employ traditional coping strategies, such as sale of livestock or temporary migration to canal areas, and has helped build their absorptive capacity to deal with environmental stress, specifically failure of monsoon rains.

Looking ahead from a climate change perspective, the existing patterns of internal migration point to the need of taking into account factors that have led to disproportionately high levels of migration from certain regions compared to others. Since internal migration has its costs in terms of increased pressure on infrastructure and public services in large urban areas, such as Karachi,<sup>82</sup> there may be a case for an increased focus on in situ adaptation in Khyber Pakhtunkhwa and FATA regions to enhance sustainable livelihoods locally. Where in situ adaptation is not possible, destinations for internal

(79) Figures calculated from Population Census Organisation, Statistics Division, 1998 Pakistan Census Report, 2001. Table 19, 240. A significant 12% of 'migrants' did not report a place of origin according to the census. (80) Population Census Organisation, "Demographic Indicators 1998", <http://www.census.gov.pk/DemographicIndicator.htm> (81) Arif Hasan, *The Unplanned Revolution. Observations on the Processes of Socio-economic Change in Pakistan.* (Karachi Oxford University Press 2009), 93. (82) According to the 1998 census, 13% of the total migrants migrated to Karachi alone.

migration could be diversified away from a small number of major cities to avoid creating new vulnerabilities. Such vulnerabilities may come in the form of new internal migrants having to live in low-lying areas prone to flooding or along coastal belts at risk of tropical cyclones. At the same time, relatively limited level of cross-district migration from and within Sindh and Balochistan as revealed in the last census,<sup>83</sup> warrant an inquiry into whether there are sections in the two provinces, which represent what we earlier referred to as 'trapped populations', namely those who lack resources or capacity to undertake migration despite the intensity of environmental and economic stressors.

Official census attempts at accounting for the reasons for in-migration but classifies them in a way that filters out environmental factors and muffles women's views on why the decision to migrate was taken. In addition to 17%-mostly women-who reported moving out of their district of origin into a new one due to marriage, some 43% of all respondents in the 1998 census said they had moved 'with the family head'. No supplementary questions are asked as to why the family-head moved in the first place. Overall, 12% respondents mentioned 'employment' and 9% 'business' as the reason why they opted to migrate. A very high 19% responses are lumped under the category 'Other'.<sup>84</sup> By pre-coding a small-range of close-ended responses, the official census seems to have foreclosed the possibility of environmental stress as a possible reason for migration. The system of classification, which insists on slotting migrants into a neat category of 'economic migrants' i.e. those moving for 'employment' or 'business' is a reductionist enterprise that does not allow for the full range of push and pull factors to be taken into account. Based on interviews with migrants, Arif Hasan has concluded socio-

economic changes in the villages, such as emergence of cash economy and increased costs of agricultural production, as among the important reasons for rural-to-urban migration.<sup>85</sup> Case studies that we share shortly establish the relevance of environmental factors in understanding new patterns of human mobility in Pakistan. They also highlight the fallacy of the census definition of 'migrants' as much of internal migration on account of environmental stress takes place within a district from one sub-administrative unit (tehsil) into another rather than across districts as the official definition holds.

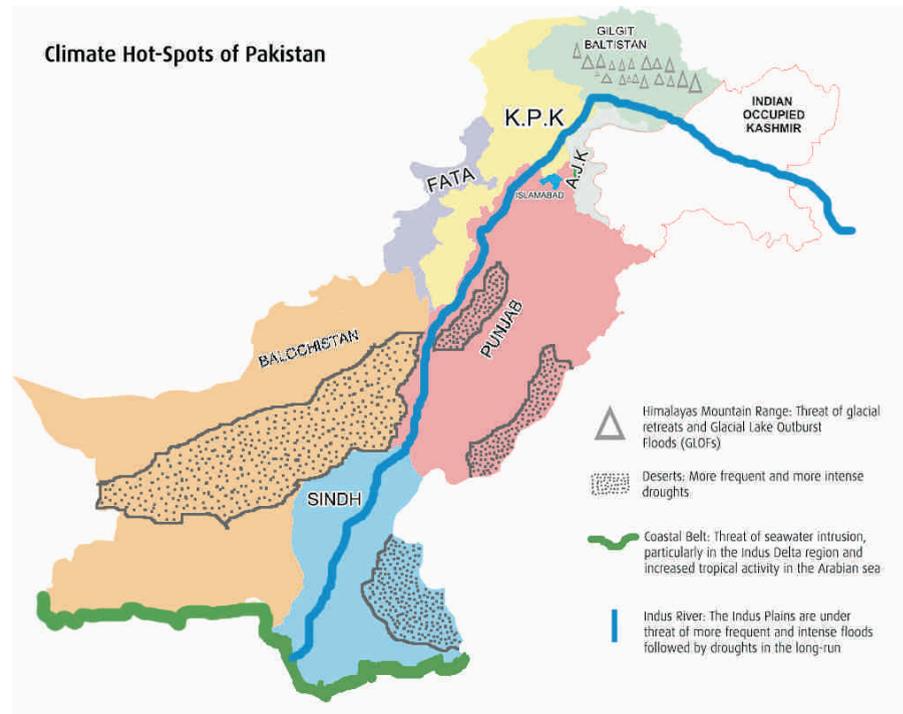
One final phenomenon to consider before we round off this overview is the presence of Bangladeshi and Burmese immigrants in Karachi, not least because of the possible environmental roots and implications of this form of migration in Pakistan's largest metropolis. On some estimates, there are over 300,000 Bangladeshi and Burmese settled in Karachi, most of who work in the fishing sector.<sup>86</sup> 'Local fishermen', many of whom are migrants from other coastal parts in Sindh themselves, are resentful of these 'foreign' workers as they work at cheaper rates and allegedly violate environmental regulations, such as prohibition on the use of certain harmful nets. Many of these Bangladeshi and Burmese workers have acquired national identity cards but continue to be harassed by law enforcing agencies from time to time. While most Burmese arrived into Pakistan in the 1980s following persecution of the Muslim minority in Burma (now Myanmar), there are good reasons to believe that substantial proportion of Bangladeshis had been driven out of their country of origin due to environmental stress in addition to purely economic reasons.

Based on focus group discussions in Karachi's

(83) It is possible that the pattern has changed significantly since the 1998 census, which is the only source of country-wide demographic and mobility data we currently have. Also, the census definition, as mentioned earlier, does not include intra-district migration. As two case studies in the present section suggest, much of environment-related migration takes place within the boundaries of a district.

(84) Figures cited in Hasan, 34.

(85) *ibid*, 11 (86) Umrani Uris, *Understanding Compelling Factors of Fishing Communities Who Migrated From Bangladesh*. (Islamabad: LEAD, 2008). Unpublished. On file with the author.



squatter settlement, Machar Colony, and analysis of meteorological data, Uris Umrani for example, has provided evidence of climatic processes, repeated floods, cyclones and seawater intrusion in Bangladesh's Chitangong, Farid Pur and Chand Pur Districts, having played a major part in pushing these immigrant families out of Bangladesh during mid-1970s to early 1980s.<sup>87</sup> Using one set of criteria to judge the conditions and rights of Pakistani migrants abroad and another one to evaluate the situation of international migrants in Pakistan is not only untenable on normative grounds, it also creates more problems than it solves. Just as there were reasons for Pakistani workers to migrate to the United Kingdom in the immediate post-colonial era, so were there precedents and pull factors for Bangladeshis to enter Pakistan.

### Case 1: Drought and Migration in Tharparkar and Kohistan Region of Sindh

Thar and much of Kohistan region in Sindh

(87) Ibid, 7-8.

(88) NDMA, National Disaster Risk Management Framework (Islamabad: NDMA, 2007), xi.

(89) Oxfam GB, Socio-economic Impact of Low Monsoon Rainfall in Selected Arid Regions of Pakistan, Unpublished Report, 2013.

province depends entirely on monsoon precipitation for crop cultivation, replenishing of rangelands and groundwater recharge. Lack of monsoon rains could easily lead to a drought in these regions, while delayed monsoon could significantly affect crop-yields and sources of drinking water. Recurrent droughts, have in fact, been a part of life for local communities, even though their frequency is believed to have increased over the past few decades.<sup>88</sup> Unlike the canal-fed areas, Tharparkar and rain-fed areas of Umerkot and Kohistan region have only one cropping season i.e. kharif, which requires at least two or three spells of monsoon rains for a good yield. The present case study is based on an assessment of the impact of failed monsoons in the region in 2012.<sup>89</sup>

The rainfall pattern in Pakistan is known to be highly variable, a fact which some experts see as being augmented under the influence of global warming. A paper published in the

Pakistan Journal of Meteorology investigated variability in precipitation over the period 1960-2009. The findings revealed high value of variability coefficient in Balochistan (251%), Sindh (247%) and Punjab (208%) regions. The analysis showed an increasing trend of variability coefficient from North to South in Pakistan. The decadal analysis of rainfall variability showed that the highest value of variability coefficient during the fourth decade of the study i.e. 1990-99 most probably due to the strong ENSO (El Nino Southern Oscillation) episodes, an important driver of annual variability of climate and extreme events such as droughts, flooding and hurricanes. Due to high variability in lower part of the country, seasonal as well as extreme events prediction is difficult.<sup>90</sup>

The precipitation data for the period 2007 to 2012 for selected arid districts of the country obtained from the Pakistan Meteorological Department (PMD) provides something of a flavor of erratic nature of monsoon rainfall experienced in Pakistan in recent years. The weather station at Chor near Umerkot, for example, recorded 148 mm and 276 mm of rain during the month of August in the years 2010 and 2011 respectively corresponding with the worst flooding in Pakistan's history. The year 2012, by contrast, witnessed a bare 20 mm of rain during August. The figure is significantly lower even compared to precipitation levels during the years preceding the heavy monsoon years. District Tharparkar received just 10 mm of rain during the month of July (2012) when most farmers normally begin preparing and weeding their farms in anticipation of monsoon rainfall. The paltry rainfall of 25 mm during August arrived only after August 16, when the district had already been declared 'calamity-hit'. In the case of Thano Bulla Khan/Kohistan region, the nearest weather station recorded virtually no rain in July and August. The arrival of monsoon rains in September in Jamshoro as shown in the table below provides evidence of changing sowing patterns reported by many farmers

during the course of data collection.

Water stress, droughts and failure of rains has been a long-standing feature of life for communities in the region. Communities have historically adjusted to the vagaries of nature by sowing drought resistant and water efficient crops, such as millet and sorghum. Unreliable nature of subsistence agriculture has also led rural populations to increasingly rely on livestock as main source of income and sellable assets in times of crises. Analyzing the impact of failed monsoons, the OGB assessment concluded that gender norms, caste hierarchies and class background all affect people's capacity to adapt to water stress. Those with financial capital are less vulnerable or less likely to suffer as they can use that money to purchase fodder and food items in the market. Lack of financial capital drives people deeper down into debts, leads them to cut down on food intake, put off medical treatment, and undergo a range of other hardships. There are those who have consciously used long-term or permanent migration to deal with precarious livelihoods and environmental stress. Some upper castes have shifted to nearby towns, such as Mithi and Islamkot and set up small businesses. Migration to Karachi has also been on the rise. From lower-income groups, one or two male family members usually migrate to town. Remittances they send back often support entire extended families. This strategy also reduces the number of people that a household must support and establishes connections that may help migration of additional family members.

However, the extent of migration out of the district remains limited despite the severity of economic and environmental pressure. Extensive fieldwork in the region suggests that despite the pull of better life in urban centres, there are several constraints on people's mobility. Lack of financial capital to fund journeys, limited skills and levels of literacy, high levels of debts all serve to constrain

(90) Ghazala Naheed and Ghulam Rasool, "Investigation of Rainfall Variability for Pakistan, Pakistan Journal of Meteorology" Vol. 7, Issue 14.



opportunities for outmigration. Also, most people attempt to adjust to local conditions with varying degrees of success.

One coping strategy they employ is seasonal

migration to canal-irrigated areas. Communities from Tharparkar region, according to local elders, have always migrated to canal-irrigated districts of Sindh in dry seasons and during drought years. In

Monthly Rainfall(mm) of Hyderabad(Jamshoro)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	0.0	3.0	33.5	0.0	0.0	34.3	7.5	130.4	0.0	0.0	0.0	33.2
2008	8.8	TRACE	1.0	14.5	0.0	0.7	8.0	103.8	0.0	0.0	0.0	19.8
2009	0.7	0.2	0.4	0.6	0.0	0.3	137.8	62.2	0.0	0.0	0.0	0.0
2010	0.0	0.1	0.0	0.0	0.0	76.0	37.0	81.0	19.0	0.0	4.0	0.0
2011	0.0	8.0	0.0	0.0	0.0	0.0	7.0	162.2	244.2	0.0	0.0	0.0
2012	7.0	0.0	0.0	10.0	0.0	0.0	0.0	1.1	110.2	0.0	0.0	14.1
Monthly Rainfall(mm) of Chhor(near Umerkot)												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	0.0	14.2	14.8	0.0	0.0	1.3	55.3	36.3	24.6	0.0	0.0	12.3
2008	0.0	0.0	0.0	22.7	0.0	0.0	37.1	50.3	3.7	0.0	0.0	12.3
2009	0.0	0.0	10.0	0.0	0.0	5.0	172.3	51.6	0.0	1.0	0.0	0.0
2010	0.0	6.0	0.0	0.0	0.0	52.0	74.0	148.0	64.0	12.0	4.0	0.0
2011	0.0	0.1	0.0	0.0	0.0	0.0	8.0	276.0	268.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	1.0	23.0	29.1	170.0	0.0	0.0	1.0
Monthly Rainfall(mm) Mirpurkhas(near Umerkot)												
Years	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2007	0.0	0.0	0.0	0.0	0.0	77.5	0.0	45.7	3.0	0.0	0.0	0.0
2008	4.0	0.0	0.0	14.0	0.0	0.0	27.0	30.0	0.0	0.0	0.0	20.0
2009	1.0	0.0	6.0	0.0	0.0	TRACE	102.5	18.0	0.0	0.0	0.0	10.0
2010	0.0	TRACE	0.0	0.0	0.0	95.0	248.0	99.0	10.0	0.0	0.0	0.0
2011	0.0	TRACE	0.0	0.0	0.0	0.0	0.1	263.1	603.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	56.0	0.0	0.0	0.0
Monthly Rainfall(mm) of D.I.Khan												
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	4.9	120.2	70.1	3.8	1.3	16.2	153.4	27.5	16.5	0.0	1.1	1.4
2008	5.2	24.2	1.8	37.2	16.9	31.5	103.6	147.1	101.3	TRACE	0.0	17.3
2009	7.6	15.6	33.0	21.1	3.5	10.1	70.7	58.6	32.4	29.5	TRACE	0.0
2010	12.0	1.0	39.0	1.0	2.0	51.0	147.0	376.0	50.0	0.0	0.0	0.1
2011	2.0	48.0	18.0	19.0	1.0	10.0	55.0	89.1	22.2	5.2	0.3	0.0
2012	0.6	9.3	1.2	77.3	4.6	5.3	84.1	134.2	121.2	0.1	0.2	104.0
Monthly Rainfall(mm) Mithi(Tharparkar)												
Years	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2007	0.0	0.0	0.0	0.0	0.0	62.0	22.0	98.6	34.5	0.0	0.0	0.0
2008	0.0	TR	0.0	3.6	0.0	0.0	43.0	135.0	0.0	0.0	0.0	10.0
2009	0.0	0.0	0.0	0.0	0.0	16.0	294.0	106.0	4.0	0.0	0.0	0.0
2010	1.1	0.0	0.0	0.0	0.0	22.0	61.8	278.0	42.0	8.0	0.0	0.0
2011	11.0	0.4	0.0	0.0	0.0	0.0	9.0	567.0	778.8	0.0	0.0	0.0
2012	0.0	0.0	0.0	TRACE	0.0	28.0	10.0	25.0	164.0	0.0	0.0	1.0

Note: TRACE means amount of rainfall less than 0.1mm

Table 2: Precipitation Data for Selected Arid Districts for the period 2007-12 (Pakistan Meteorological Department)

normal years, most migration occurs during April and May when wheat is harvested. Farmers also migrate to pick cotton and to harvest rice during October-December, albeit in lesser numbers since the period overlaps with the harvest of local crops.

The supply of labour, the study revealed, increases exponentially during a bad year. As a result, some farmers fail to find work. Also, while in a good year, only a few members of the family migrate, in a bad one they may be compelled to take all members along to maximize their share of the crop-yield. Similarly, landless peasants and herders who have to find grazing land for their livestock during dry seasons, migrate more regularly than those who own land. In all field sites visited, we found families who said they would not have migrated for seasonal work if they had had a good crop. More children have to accompany their families during drought years than is normally the case, disrupting their studies.

Seasonal migration has its gender and caste dimensions. Women from higher castes, both Muslim and non-Muslim, do not leave their villages for seasonal work except in drought years. More women from scheduled castes, especially Kohli community, migrate. Women's labour is in particularly high demand during cotton and chili picking. For women, seasonal migration entails a manifold increase in their tasks. In addition to working on the farm-harvesting, threshing and loading, all of which involves excessive physical strain-they have to cook food, look after children and tend to livestock. They also complain that they feel insecure in an alien environment.

Receiving an advance payment from a seasonal labour contractor or jamadar, as they are locally known, is more common during drought years. Illiterate haris are not able to monetize their output and end up receiving

less than their due share. When in need of cash, they also sell off their share of output to the landlord at less than market-rates. They also have to set aside part of their earnings in cash or in kind to pay back debts usually incurred to make the journey in the first place.

The case of Tharparkar and Kohistan region in the face of severe environmental stress reveals how environmental factors interact with socio-economic realities to shape migratory responses. Majority of people, evidence suggests, make efforts to cope with water scarcity and failure of crops in situ or by traveling short distances for seasonal work. The dividends of such measures, however, are often compromised by exploitative social practices and lack of institutional support.

### Case 2: Water Stress and Migration in the Indus Delta Region

A study was conducted for Oxfam Great Britain's Pakistan programme in 2010 to explore the links between migration and water stress and other environmental factors, such as natural disasters and climate variability.<sup>91</sup> Primary data was collected through a sample survey with over 1600 agricultural and fishing households in seventeen union councils of districts Thatta and Badin using multiple-stage cluster sampling.<sup>92</sup> In addition, in-depth interviews were conducted with a small number of migrant families from the Indus Delta residing in Karachi and Hyderabad.

With a coastline stretching 250 kilometers, the Indus Delta is the fifth largest delta in the world.<sup>93</sup> The delta consists of several creeks and fast dwindling mangrove forests between Karachi and the Rann of Kutch in the South, which at present cover just about less than 129,000 hectares. Thatta and the adjoining Badin district situated on the delta had a combined estimated population of 2.7 million in 2010.<sup>94</sup> The source of fresh water and silt is

(91) Oxfam GB, Migration Water Stress and Climate Change in the Indus Delta. Unpublished Report, 2010. (92) Ibid, 33.

(93) IUCN, Indus Delta, Pakistan-Economic Costs of Reduction in Freshwater Flows. Case Studies in Wetland Valuation. (Karachi: IUCN, 2003), 1.

(94) Population projected using inter-census growth rate, which comes very close to projections made by the National Institute of Population Studies (NIPS). Badin at 1.38 million has a slightly higher percentage than Thatta, which stands at around 1.32 million.



the Indus river, which falls in the Arabian Sea at Keeti Bundar in Thatta District.

Occupying an area of about 600,000 hectares and with a coastline 250 kilometers, the Indus Delta is the fifth largest delta in the world (IUCN 2003:1). It consists of 17 major creeks, mudflats and an estimated 129,000 hectares of mangrove forests between Karachi in the West and the Rann of Kutch in the South. The sea water has intruded inland up to 1.2 million acres, rendering what was once fertile agricultural land extremely saline. Salinity of the seawater itself has increased, which is detrimental to the growth of mangroves. Coastal stability has been affected due to lack of sediments flow. Quality of surface water aquifers has deteriorated. And finally, certain species of fish, which were dependent on mangroves and fresh water, have become almost extinct.<sup>95</sup> While there is some evidence of the rise in sea-level, most experts and local activists believe that abstraction of water upstream, especially following the construction of Kotri Barrage in 1962, has led to a steady decline in the discharge of fresh water into the sea.

Districts Thatta and Badin have suffered a series of disasters, including a cyclone in 2005, which destroyed over 1500 houses in the two districts. Earlier in 1999, an even bigger cyclone hit the region, killing at least 550 people. The sea water intruded into the irrigation land through the tidal link of the Left Bank Outfall Drain (LBOD) aggravating the loss of life and property. Steady deterioration of the deltaic ecosystem with severe implications for fishing and farming sectors, repeated cyclones as well as ill-conceived development projects, have been significant determinants of population movements within and out of the districts of Thatta and Badin.

Historically, people in the region depended on flood irrigation, growing crops after the recession of floods in the Kharif season. Rice

was the main crop and an export commodity. Red rice, a crop cultivated in the active delta, has long since disappeared. While agriculture still forms a source of livelihoods for at least 50% of the population, many small farmers and share-croppers turned to fishing after losing agricultural land to seawater intrusion or lack of fresh water for cultivating crops in what can be seen as an adaptation measure. Survey findings revealed that large land holders have been more successful in adapting to changing climatic conditions and water scarcity compared to small and marginal land-holders.

The coastal belt, especially in Thatta, has seen families move to Karachi in successive waves following shortage of drinking water, seawater intrusion and extreme events since 1970s. Estimates suggest that at least 4000 families or around 40,000 people from the two districts are now residing in coastal Karachi, concentrated in the villages of Ibrahim Hyderi and Rehri. Their presence in Karachi provides an incentive to others in the Delta region to move in drawing on ethnic and social links to minimize the risks involved in the process of migration. The squatter settlements of Naseem Nagar, Sheedi Goth and Bund in Qasimabad, Hyderabad, host at least 150 families from district Badin, many of whom moved in after being displaced by storms and cyclones. Interviews with those displaced indicated that lack of official support for rebuilding in the aftermath of extreme events had prevented some families to move back to their villages much as they would have liked to.

Asked if the respondent had a family member settled in some other city or district for work, some 4% respondents replied in affirmative. Of these, around 60% said the family member(s) was working in another district or city and the remaining 40% said they were working within the district. Larger households (11 or more members) had a higher

(95) Most notable being palla, which swims upstream in certain seasons, and as such depends on a steady flow of fresh water.

percentage of those reporting a family member working elsewhere compared to smaller households.<sup>96</sup>

While the existing levels of permanent or longer-term migration within and away from the Indus Delta are not too large, a sizable 19% of respondents said they themselves or a household member had migrated during certain seasons over the past two years. Survey data reveals a clear link between poverty and propensity for seasonal work. The poorest of the poor and those with marginal land-holdings have significantly higher percentages of respondents saying they had gone out for seasonal work during the past two years. As in the case of Tharparkar, accumulation of debts was found to be common, especially among share-croppers and fisher folk who work for contractors. Many reported to have incurred debts while financing the migration of a family member. While these non-institutional sources of credit may help families in short-term, debts thus incurred constitute a severe burden on their absorptive capacity or resilience over longer-term.

By contrast to the reasons mentioned for migration of a family member-which related mostly to poverty, failing crops and

employment issues-respondents planning to migrate themselves mentioned lack of drinking water as a primary reason. Since water scarcity involves entire families moving, we may be looking at potentially large numbers of people on the move in years to come. Again, it would be difficult to isolate environmental and climatic factors from other drivers but their relevance to current and emerging patterns of mobility is all too evident to deny.

(96) OGB 2010, 49.



### 3. Policy and Legal Regime Governing Climate-Related Migration

Even as the consequences of climate change, including the prospect of new forms of displacement and migration, are likely to affect the countries of the South most, no region can be said to be immune from its impact. In addition to the possibility of increased levels of international mobility, continued environmental degradation and instability in one country may easily spill over into another. The relevance of international law and policy to climate-related mobility is thus self-evident. Disagreements and ambiguities abound though as to the validity of specific legal regimes and institutional arrangements in the context of climate change migration. Opinions differ as to whether we need a specific legal regime dealing with the issue or would be better off adapting existing regimes to new forms of mobility. In this section, we will highlight some of these competing views and assess the relevance of various bodies of international law to climate-related migration. This will be followed by a brief discussion of global climate change adaptation regime and its relevance to migration. Finally, we will round off with a critical overview of salient policy issues in the context of Pakistan.

#### 3.1 The Idea of a New Convention or Protocol

One strand of opinion favours a specific Convention or a Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) specifying the rights of 'climate refugees', State obligations and burden-sharing arrangements.<sup>97</sup> The idea stems from the belief that existing international law dealing with voluntary or forced migration does not specifically cover human mobility in the context of climate change. At the normative level, the biggest hurdle the idea of a separate convention has

to surmount is defining who exactly is a 'climate refugee'. As we hope to have shown in the preceding discussion, it is all but impossible to isolate 'climate change' as a driver of migration, since it is invariably intertwined with other economic, social and demographic issues. The task is relatively easier in the context of displacement as a result of some extreme events, such as tropical cyclones. Such events, however, usually displace people within the borders of a State, thus minimizing the need for a specific international treaty.

As regards the scenarios where people get 'displaced' across borders due to climate change or generalized conditions of violence and unrest, there is the concept of 'temporary protection' on humanitarian grounds adopted in some countries in the West. This is a 'solution' apparently preferred by UNHCR and the Secretary General's Representative on Internal Displacement. Admittedly, in most cases, especially as a result of sudden extreme weather events, asylum claims cannot be sustained under the Refugee Convention because of inability to demonstrate 'a well-founded fear of persecution' for a Convention reason. The claimants may then legitimately be granted a temporary leave to stay in the receiving country on humanitarian grounds. However, to lump all cases arising out of climate change scenarios under 'temporary protection' is unpersuasive, and may amount to a virtual denial of the right to seek asylum.

With regard to a specific instrument governing climate-related 'displacement', there is also a danger that it might end up constructing an arbitrary normative hierarchy between 'political refugees' and

(97) OGB 2010, 49.

'environmentally displaced'. It is conceptually flawed to operate with a prior distinctions that privilege certain forms of suffering over others. If a separate regime is devised, it should be aimed at creating parity between those forced to migrate due to climate-related factors and those fleeing 'political' persecution. A more immediate practical problem would be to get countries to agree on a new instrument considering the difficulties witnessed as part of the efforts for renewing the Kyoto regime. It has also been pointed out that the focus on a new convention may 'shift (attention) from the more immediate, alternative and additional responses that may enable people to remain in their homes for as long as possible (which is the predominant wish among affected communities), or to move safely within their own countries, or to migrate in a planned manner over time'.<sup>98</sup>

### 3.1.1 Guiding Principles on Internal displacement

The 1998 UN Guiding Principles on Internal Displacement identify the internally displaced persons (IDPs) as 'persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognised State border'.<sup>99</sup>

Many of those internally displaced flee their homes for the same reasons and conditions as refugees do. The international refugee law, however, explicitly applies only to those who cross an international border. The Guiding Principles can be seen as a compromise attempt to fill the legal gap as regards the protection standards for those who remain within the borders of their own country. Although not a legally binding

instrument, the Principles have received wide endorsement from governments.

Given that majority of those displaced by sudden extreme events in the context of climate change are likely to travel short distances within State borders, the Guiding Principles provide a normative framework for addressing protection challenges and new vulnerabilities created during and as a result of displacement. However, optimism regarding their efficacy in situations where populations get displaced on account of climate-induced disasters needs to be tempered by recognition of the problems in their practical application. Walter Kälin, a leading scholar in the field of refugee and human rights law-and someone who was personally involved in drafting the Guiding Principles-had this to say on the tenth anniversary of their adoption by the UN General Assembly: 'My missions and visits to countries affected by internal displacement have shown that, even where the political will to help IDPs does exist, applicable legislation often fails to take into account their specific needs and thus may create insurmountable obstacles for enjoyment of the rights guaranteed to them'.<sup>100</sup> Kälin particularly mentions how the education of displaced children gets affected when they are unable to produce transfer papers or birth certificates and how some IDPs are deprived of their property upon return as they have no legal deeds to claim ownership.

### 3.1.2 International Migration law in General

Historically, the idea of State sovereignty entailed an absolute sovereign discretion over the entry and exclusion of aliens, unrestrained by international law. Immigration policy and law continues to be the main instrument by which States express their sovereignty both substantially and symbolically by imposing restrictions on who can enter and legally reside in a

(98) McAdam (2011), 5. (99) UN Guiding Principles on Internal Displacement, Introduction, Para 2.

(100) Walter Kälin, "The Future of Guiding Principles", *Forced Migration Review*, 2008, 38.



country. The Refugee Convention, at least in theory, makes inroads into State discretion by requiring contracting parties in Article 33(1) not to 'expel or return ('refouler') a refugee in any manner whatsoever to the frontiers of territories where his life or freedom would be threatened on account of his race, religion, nationality, membership of a particular social group or political opinion'.<sup>101</sup>

Not all States have signed up to the Refugee Convention, Pakistan being a pertinent example. Even where a State is a party to the Convention, various means are devised to circumvent the obligation to process asylum claims. Those not meeting the refugee criteria or entering into a State without proper authorization are considered 'irregular', 'illegal' or 'undocumented' migrants. In the context of climate-related stressors, with most countries applying restrictive immigration regimes, it is likely that we might see an upsurge in the numbers of migrants who are unable to bear the costs of legal migration or do not meet the immigration requirements otherwise. Given that poverty and environmental stress often interact to produce such forms of irregular migration, a broader appreciation of issues is required to address the situation of this sub-set of international migrants in the climate change context as well.

The UN Convention on the Protection of the Rights of All Migrant Workers and their Families, 1990, is the only UN instrument with direct relevance to irregular or undocumented migrant workers. Prior to the Convention, undocumented migrants had either been explicitly excluded from coverage or had been ignored as a distinct class under the provisions of virtually all existing human rights instruments.

The Migrant Rights Convention extends a

range of civil rights and employment related protections to 'all migrant workers and members of their families'. Thus, under the Convention, State parties are to afford to undocumented as well as documented migrants a range of civil, social and labor rights as against the state of employment, employers, and other individuals within the state. These include, but are not limited to, rights to due process of law in criminal proceedings, free expression and religious observance, domestic privacy, equality with nationals before the courts, emergency medical care, education for children, respect for cultural identity, and process rights in the detention and deportation context. They also include the rights to enforce employment contracts against employers, to participate in trade unions, and to enjoy the protection of wage, hour and health regulations in the workplace (Part I of Convention, Articles 8-35).

However, the Convention's overall treatment of undocumented immigrants is deeply ambivalent. In the first place, the Convention is as striking for its exclusion of undocumented immigrants from the scope of certain important rights and protections as it is for its explicit coverage of them by others. While contracting states must meet the minimum standard of treatment of irregular migrants prescribed in Part I of the Convention, the rights provided these migrants need not be as extensive as those which must be afforded to migrant workers and members of their families who are in a regular situation in the state of employment. States parties are entitled to discriminate against undocumented migrants with respect to rights to family unity, liberty of movement, participation in the public affairs of the state of employment, equality of treatment with nationals as regards the receipt of various social services, equality of treatment for family members, freedom from double

(101) Within the terms of the Refugee Convention, this provision will not apply to those unable to meet the criteria specified in Article 1 (A) (2) or who are excluded from the Convention protection under the Exclusion Clause 1(F), having committed certain international crimes, serious non-political crimes, or 'acts contrary to the purposes and principles of the United Nations'. A distinct feature of the Refugee Convention, as we describe in the next section, is that States retain the authority of deciding who qualifies as a refugee.

taxation, and further employment protections and trade union rights, among others.

The Convention permits state parties to pursue the immigration control policies that they see fit (Article 79), and requires them to undertake control measures to end the process of clandestine migration and the presence and employment of irregular migrants including, 'whenever appropriate', employer sanctions (Articles 68 and 69). All in all, despite the unmistakable normative value of many of the Convention's protective provisions, the Convention's ability to substantially ameliorate the human rights situation of irregular migrants is significantly constrained by its overriding commitment to the norms and structures of sovereign statehood. For migrant producing countries, an immediate concern should then be improvements in the existing international migration law rather than negotiating a new instrument.

Current trends suggest increasingly restrictive immigration regimes for migrants from the developing world most threatened by the impact of climate change. Hugo suggests that we are likely to see low barriers for highly skilled and high barriers for low-skilled heading into the future.<sup>102</sup> There are some isolated positive examples of the kind of arrangements that may benefit both sending and receiving countries. For example, New Zealand provides an annual quota of settlers selected from Small Pacific Island States of Tonga, Tuvalu, Kiribati and Fiji. More importantly, there is a seasonal employer scheme that allows agricultural employers to bring in workers from the Pacific for an agricultural season.<sup>103</sup> Such arrangements geared toward seasonal or guest workers from vulnerable regions could reduce potential for distress migration, often through irregular channels, while addressing

labour shortages in countries better equipped and resourced to deal with the impact of climate change.

### 3.1.3 Refugee law

Throughout this paper, we have avoided the term 'climate refugees' not because we consider refugee law to be totally irrelevant to forced migration in the context of climate change, but because of a belief that it is a reductionist title that subsumes often complex interplays of ecological, economic and political factors under a convenient banner.

The United Nations Refugee Agency (UNHCR) has expressed reservations about the use of the term 'environmental refugee' or 'climate refugee', stating that these terms have no 'legal status under international law'.<sup>104</sup> The UNHCR has, however, admitted the possibility of the Refugee Convention being applied in selected cases where a State withholds aid from the victims of 'natural disasters', for example.<sup>105</sup> Backing this official position most persistently in academic literature today is Australian scholar Jane McAdam, who finds the application of the Refugee Convention to those 'displaced' by climate change problematic because phenomena such as 'rising sea-levels and salinization', on her account, 'do not constitute persecution in accordance with the meaning it has been ascribed in international and domestic law'. And even if you can establish them as amounting to persecution, McAdam hastens to add, 'persecution has to be on account of individual's race, religion, nationality, political opinion or membership of a particular social'.<sup>106</sup> Another objection to the suggestion that the Refugee Convention may be applicable in certain climate-related scenarios has been that such 'displacement

(102) Hugo (2011), 26. (103) Ibid, 34.(104) UNHCR, Summary of Deliberations on Climate Change and Displacement. International Journal of Refugee Law Vol. 23 No. 3 (2011) 561-574. 562. (105) UNHCR, Forced Displacement in the Context of Climate Change: Challenges for States under International Law. Paper submitted to the 6th session of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (AWG-LCA 6). 19 May 2009. (106) Jane McAdam and Ben Saul, An Insecure Climate for Human Security/ Climate-induced Displacement and International Law, in Human Security and Non-Citizens. Law, Policy and International Affairs, eds. Alice Edwards and Carla Fertsman, 357-403. 371. (Cambridge: Cambridge University Press, 2010).



is neither covered by the wording and purpose of (the Convention) definition, nor was it considered by the drafters of the treaty'.<sup>107</sup>

The immediate backdrop for the 1951 Convention, it is well-known, was the persecution of Jewish population in Nazi Germany and the rise of Communism in Central and Eastern Europe. Originally, the Convention applied to refugees who acquired that status 'as a result of events occurring before 1 January 1951'.<sup>108</sup> States were also given an option to limit the Convention's application to refugees displaced due to 'events occurring in Europe'.<sup>109</sup> The temporal and geographical limitations were removed in 1967 with the signing of the Protocol, which did not revise the substantive provisions or the definition though.

Article 1(A)(2) of the Refugee Convention, as amended by the 1967 Protocol, provides that the term 'refugee' shall apply to any person who: 'owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his (sic) nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it'.

The skeptical view taken by McAdam and UNHCR is based, in large part, on the fact that climate-related 'displacement' is 'neither covered by the wording and purpose of this definition, nor was it considered by the drafters of the treaty'. The argument is reasonable except that there is no evidence either of drafters having

considered gender-based violence, female genital mutilation or sexual orientation as potential sources of asylum claims. Nonetheless, the definition has been interpreted by courts in a number of jurisdictions to accommodate these types of claims within the Convention definition. It is beyond the scope of this paper to elaborate the relevant case-law in detail. Suffice it to mention that a historically-frozen interpretation of the Convention would have stifled any evolution in the light of contemporary realities.

The Vienna Convention on the Law of Treaties, after all, requires that a treaty be interpreted 'in good faith' and 'in the light of its object and purpose'.<sup>110</sup> The Preamble of the Refugee Convention, as interpreted by courts in a number of jurisdictions, clearly establishes protection of human rights as its 'object and purpose'. Interpreting the Convention definition in the light of human rights principles is also justified by the need for having objective standards to adjudicate on open-ended terms, such as 'well-founded fear', 'persecution' and 'membership of a particular social group'. Once this approach is accepted as correct, the scepticism expressed by UNHCR, and scholars like Jane McAdam, on the relevance of the Convention in climate change contexts begins to lose ground. Just as a girl escaping a harmful traditional practice (FGM) condoned by her State, has legal basis to prove that she has been a victim of 'persecution' on the basis of a Convention ground (membership of a particular social group i.e. girls at risk of being subjected to FGM),<sup>111</sup> so do pastoralists and fisher folk fleeing the cumulative effects of State-sponsored or tolerated resource degradation and exploitative practices targeting a particular economic class, caste or an occupational group. Surely, generalized conditions of poverty and environmental stress do not, ipso facto, form the basis for a

(107) Walter Kalin, *Conceptualising Climate-Induced Displacement in Climate Change and Displacement. Multidisciplinary Perspectives*, ed. Jane McAdam, 88. (Oxford: Hart, 2012). (108) Art 1 (A),(109) Art 1 (B),(110) Art 31 (1), Vienna Convention on the Law of Treaties, 1969. (111) In re Fauziya Kasinga, 21 I. & N. Dec. 357, 365, Int. Dec. 3278 (BIA June 13, 1996)

genuine asylum claim. However, the differential impact of climate change on various groups, and the involvement of States in exacerbating vulnerabilities, requires a more sensitive and context-specific approach to framing climate-related forced migration.

There have been some calls for amending the Convention definition to encompass current problems, such as gender-based violence and environmentally induced migration. Such a change, it is argued, is required to remove 'Euro-centric bias' in the definition, and to provide clarity on what constitutes 'persecution', for example.<sup>112</sup> Apart from practical difficulties in getting States to agree on any change, it is questionable if such a move is even desirable on normative grounds. Just as the framers of the Convention did not foresee gender-based violence as forming the basis for asylum claims, so too there are limits to the kind of future problems that we can envisage. It is perhaps better to have a less than ideal scheme and apply it liberally rather than making botched attempts at perfection.

Absent a specific regime governing climate-related migration, justice and decency demand that all claims arising out of climate change scenarios are treated on merits of the case, bringing to bear a context-sensitive and human rights-oriented approach to refugee status determination. This seems difficult in practical terms, however. Many countries post 9/11, especially in the West, have witnessed a turn toward penal populism, including harsher penalties, and 'tough-on-crime' policies out of which politicians seek to draw electoral mileage.<sup>113</sup> Demonization of refugees has been an essential component of this new punitiveness. Legislation introduced post 9/11 in both the US and Britain singled out migrants and non-citizens

for the most stringent measures.<sup>114</sup> One has good reasons to suspect then that such exclusionary and xenophobic tendencies may pose a larger obstacle to applying refugee law to climate-related asylum claims than any normative restrictions in the law per se.

### 3.2 Climate Change Adaptation and International Law

The global legal architecture governing climate change today includes the UNFCCC (1992) and the Kyoto Protocol (1997), the latter specifying binding carbon emission targets for the developed countries. Crucially, neither the UNFCCC nor the Kyoto Protocol addresses migration in the context of climate change. Global climate regime already provides for three special funds to assist developing countries: an Adaptation Fund under the 1997 Kyoto Protocol financed through a 2 percent levy on transactions under the Protocol's Clean Development Mechanism (CDM), to fund adaptation projects in developing countries; a Special Climate Change Fund to finance adaptation projects to strengthen developing countries' adaptive capacity; and a Least Developed Countries Fund to assist the least developed countries in preparing their National Adaptation Programs of Actions.

In late 2010, at the Cancun Climate Change Conference, delegates agreed that policies and projects on migration associated with climate change would be able to receive funding as a form of adaptation through the Green Climate Fund. In concrete financial terms, the Cancun Agreements have earmarked \$30 million for Global Climate Fund. Developed countries also committed to mobilize USD 100 billion dollars a year by 2020 'to address the climate change needs of developing countries, including from

(112) Satvinder Singh Juss, *International Migration and Global Justice*. (Aldershot: Ashgate, 2006), ix. (113) For a discussion of stigmatization of migrants as criminals, see Katja Franko Aas, *Globalization & Crime*. (Sage, London 2007), 75-100. (114) See for example, *Antiterrorism, Crime and Security Act 2001*, which provided for indefinite detention without trial of foreigners but not British citizens. (115) For a discussion of the Cancun Agreements, see Lavanya Rajamani, "The Cancun Climate Agreements: Reading the Text, Sub-text and Tea Leaves," *International and Comparative Law Quarterly*, vol 60, (2011): 499-519. For the issue of adaptation financing, including Pakistan's adaptation needs, see Ministry of Environment, "Policy Brief on Adaptation", [http://www.lead.org.pk/attachments/policy\\_briefs/climate\\_change%202011/PB-05\\_Adaptation-2011.pdf](http://www.lead.org.pk/attachments/policy_briefs/climate_change%202011/PB-05_Adaptation-2011.pdf)

public and private, bilateral and multilateral sources'.<sup>116</sup>

Many believe the level of current funding is not enough to meet adaptation challenges in the developing countries. The principle of 'common but differentiated responsibilities' and 'historical ecological debt' is invoked by countries in the South to call upon the industrialized countries to provide greater levels of adaptation standards. While these demands are legitimate, there is an equally strong case for developing countries to put their own house in order. For example, the idea of ecological debt could be just as persuasively invoked by communities reeling under the impact of degraded ecosystems, which they rely on. The consequences they face today are often a result of centralized and environmentally insensitive policies carried out by their own governments and by urban elites. Just as industrialized countries are called upon to pay back the developing world, these marginalized communities could justifiably demand compensation for the harm they have suffered. Additionally, there are no binding adaptation targets, which mean that governments within the developing countries have little to answer for on international platforms if they continue to ignore adaptation requirements.

That said, the Cancun Agreement appear to be a positive step in that they have helped place migration concerns within the global adaptation framework. International cooperation and local action are required for both in situ adaptation to reduce the likelihood of forced displacement and for building adaptive capacities so that individuals and communities could plan migration where necessary with least possible adaptation costs. That would necessarily entail a shift away from a laissez faire approach with regard to migration

toward a more planned approach. In terms of domestic policy, this would require allocation of sufficient funds and human resources for collecting data on environment-related migration, initiating targeted in situ adaptation in climate change hotspots, and providing credit for financing migration from vulnerable regions to safer locations, for example.

As well as specific instruments, such as the Cancun Agreement, principles of international environmental law are extremely relevant to reduce maladaptive forms of migration and displacement. For example, the 'preventive principle' based on the fact that preventing an environmental harm is cheaper and less environmentally dangerous than reacting to environmental catastrophes, may be used to prohibit damaging activities, such as deforestation, that create conditions for outmigration or reduce people's absorbing capacity in the face of climate stressors. With regard to the preventive side of forced migration and displacement, as important instrument, albeit not legally binding, is the Hyogo Framework for Action, which aims at Building the Resilience of Nations and Communities to Disasters'.<sup>117</sup> While the framework covers vulnerability reduction in immediate terms, it has little to say on 'poverty reduction or protection of livelihoods'.<sup>118</sup> Finally, it can also be argued that positive obligations attach to States under international human rights law which may help avert forced migration. For example, the European Court of Human Rights (ECtHR) has described disaster preparedness measures as part of State's obligation in respect of the right to life (Article 2).<sup>119</sup>

### 3.3 Salient Policy Issues in Pakistan

Domestic policy challenges that we will highlight in closing this chapter relate both

(116) Climate and Knowledge Development Network (CKDN), "How Can Pakistan Best Leverage Climate Finance?",

<http://ckdn.org/2013/04/feature-how-can-pakistan-best-leverage-climate-finance/> (117) Supported by 168 governments and the outcomes of a UN-sponsored meeting held in January 2005 in Kobe, Japan. (118) Cannon (2008), 301. (119) Art 2 of the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR).

to the protection standards for existing and would-be migrants as well as to migration within the framework of adaptation. With regard to the first issue, it has to be noted at the outset that Pakistan is not a signatory either to the Refugee Convention (1951) and its 1967 Protocol or the Convention on the Rights of Migrant Workers and their Families (1991). Not only does that compromise the internationally recognized rights of foreigners in Pakistan, it also reflects a fundamental hypocrisy for a country, which has large numbers of its nationals living in other countries. Perhaps, it is symptomatic of what some observers have called a 'laissez faire attitude toward migrants'.<sup>120</sup> As regards the protection of Pakistani migrants working abroad, there is the post of Community Welfare Attaché (CWA), the equivalent of the Labor Attaché in other countries, who is responsible for the promotion of overseas employment of Pakistani workers and for their welfare while abroad. At present, Pakistan has CWAs stationed in Saudi Arabia, UAE, Oman, Qatar, Bahrain, Kuwait, Libya and UK. However, focus group discussions with migrant workers who had lived in Gulf countries previously, revealed a strong sense of dissatisfaction with the role of CWAs with some saying they had not even heard of such an officer at the Pakistani Embassy in the country they worked in.<sup>121</sup>

The protection of internal migrants and those internally displaced carries its own challenges. Perhaps, the most glaring policy vacuum with implications for migration in the context of climate change is that the country does not have a Migration Policy. An Emigration Policy came out in 2009, which we briefly touch upon shortly, but there is no policy frame-work available as regards the issues of internal migration or displacement. Such a framework is necessary to ensure that rural-to-urban migration in the context of climate change

does not exact high costs, with migrants getting ghettoized or forced to live in squatter settlements in hazardous locations. Pakistan has also seen major displacements in the aftermath of the military operation against terrorists in Swat in 2009 and then in the aftermath of 2010 and 2011 floods. Admittedly, managing such huge humanitarian challenges is not an easy task and the government, in collaboration of non-governmental actors, has done a commendable job in managing IDPs in such large numbers. Some of the issues encountered during those emergencies, such as tensions between IDPs from rural Sindh and the host communities in Karachi, could well have been averted had there been a domestic policy framework available on how to accommodate and protect IDPs under such situations. The Guiding Principles on Internal Displacement, for example, could be incorporated into domestic law through legislation so that those whose rights get aggravated during displacement have some legal redress available.

As we attempted to show in our discussion of the drivers of migration, both internal and external mobility is often shaped by the same sets of underlying social, economic and environmental factors. The difference often lies in varying opportunities and risks involved in migrating within the country and across the border. As such, it would be sensible to have a broad policy framework governing both internal and external migration to shape responses that look at root causes of migration and potential destination points. That brings us to the second broad component of public policy in the context of climate change, namely its relationship with climate change adaptation. A policy framework on international migration would be crucial to address this relationship where it identifies current patterns of environment-related mobility within the country. For example, the fact

(121) (120) OGB (2010), 14.  
Solidarity Centre, 30.

that seasonal migrants, as we discussed in our case study on water stress in Tharparkar region, often involves exploitative working relationship for seasonal farm workers is not captured by any policy document at present.

The Emigration Policy already referred to has its positive sides. For example, it envisages diversification of destination countries for Pakistani migrant workers, strengthening the institution of Community Welfare Attaches in Pakistani missions abroad, appointing female CWAs and increasing the share of skilled and highly skilled workers from Pakistan in overseas job markets. The policy calls for gradual increase of women's share in emigration. However, it falls short of proposing changes in Emigration Rules 1979, specifically the clause which bars women below the age of 35 to emigrate to work as domestic workers.<sup>122</sup> The document is also silent on environmental and climatic issues that may generate a greater push for emigration in times to come. As we take on board the need for incorporating international migration as a possible adaptation strategy, much greater investment will be required in building human capital with a view to ensuring equity and equality of opportunity. Many environmentally stressed regions in Pakistan, such as arid districts in Sindh, currently lag far behind canal-irrigated districts in terms of education and health facilities. That alone seriously limits their adaptive capacity, especially in terms of undertaking migration internally over longer distances or to international destinations.

The task of incorporating migration concerns into climate change adaptation seems to have fallen through the cracks of most relevant policy document, namely Pakistan's Climate Change Policy released earlier in 2013. The policy is completely silent on the possibilities of climate-related migration, the

shapes it might take, and the areas that are likely to generate such migration. Adaptation measures proposed do not seem informed by a perspective that looks at the need for reducing forced or distress migration and facilitating planned migration as an adaptation response. Social protection schemes, such as Benazir Income Support Programme (BISP), have also failed to target vulnerability to forced migration or displacement as a criterion for extending cash grants. Finally, with regard to disaster preparedness as a means to minimizing displacement in the aftermath of extreme events, the presence of National Disaster Management Authority (NDMA) and its provincial counterparts is something the country can build on. Recent experience suggests that early warning systems are skill very weak, especially when it comes to sharing information with at-risk communities.<sup>123</sup> Lack of enforcement of building codes and land-use plans is also a serious issue that may constitute 'pre-disposing conditions' for unnecessary displacement in future.

(122) Clause 2 (xi) of the 1979 Emigration Rules states, The minimum age for employment of women as maid servant (ayas and governesses) shall be (thirty five) years, or as the Federal Government may, from time to time, fix for various categories of women workers and no Overseas Employment Promoter shall accept a demand for women workers of less than such age (123) OGB 2013, 15.

## 4. Conclusions

The consequences of climate change are already upon us and are likely to transform human lives in fundamental ways. While geography is an important element in determining vulnerability to climate hazards, with low-lying countries of the South particularly exposed to sea-level rise and extreme events, it is pre-existing conditions of political economy that determine the extent and intensity of consequences suffered.

We have attempted to bring this socially-grounded perspective to bear on the little understood phenomenon of climate-related migration. Environmental change, we have argued, has long since been a major driver of human mobility in much of the world and in Pakistan. 'Labour migration' from Pakistan to the Gulf countries as well as rural-to-urban migration has taken place mostly from arid districts where agricultural livelihoods are erratic and unreliable. Environmental drivers, however, seldom operate in isolation of broader social, economic and demographic issues. Climate change, it has been our contention, can interact with these existing drivers and patterns of migration to generate new forms of population movements in years to come. There is no straight-forward, deterministic link between climate change and migration. That is especially the case where gradual climate-related resource degradation is concerned. The presence of a climate-stressor does not mean that all those affected will choose to or will be able to migrate in response. Even in the case of sudden extreme-events, certain predisposing conditions, such as absence of protective dykes, determine the level of displacement. At times, it is not the most vulnerable who migrate under environmental stress or get displaced as a result of an extreme event. Inability to bear the costs of migration or political and social

exclusion could, in fact, result in certain groups being trapped into hazardous and life-threatening situations.

Climate-related migration is best conceptualized on a continuum to account for a wide range of circumstances that are likely to trigger such migration. It is facile to categorize all migration taking place in the context of climate change as either forced migration or voluntary migration. A significant variable in climate change-related migration is the extent and quality of adaptation measures, with huge implications for future population flows. There is an urgent need to situate migration within the framework of adaptation. Current evidence and past patterns of environment-related migration strongly indicate that most people attempt to adjust locally to environmental change before opting to migrate. In the right policy context, much can be done to reduce the potential for population shifts and prevent forced migration or the kind of migration that entails high adaptation costs. Conversely, reducing vulnerabilities, building resilience, and adaptive capacity through enhanced investments in livelihoods diversification and human capital, could prepare the ground for people to make informed choices about where to migrate and for how long. Successful migration could itself enhance adaptive capacity by building social networks, transfer of knowledge and remittances, and so on.

The global nature of climate change and associated problems do require a strong legal and policy framework to protect those who get displaced or decide to migrate in the context of climate change. There have been some calls for a separate treaty defining rights of 'environmental refugees' and burden-sharing arrangements. Such proposals, however, deserve to be taken



with a pinch of salt considering the fact that they may end up creating an arbitrary category of those 'displaced' on account of climate change. In practice, it is often impossible to isolate those who are forced to move due to poverty or strife from those migrating due to environmental stress. It is wiser to adopt a flexible approach that allows for varied scenarios of climate-related mobility to be covered under existing legal schemes and mechanisms. Since much of 'displacement' on account of sudden extreme events is likely to be within the borders of States, it would make more sense to work toward strengthening the enforcement and domestic incorporation of the UN Guiding Principles on Internal Displacement, rather than negotiating a new instrument. There is room also to bring in improvements to the UN Convention on the Protection of Migrants and their Families and to work toward innovative schemes, such as 'guest workers programmes', which entail win-win scenarios. There may be cases where climate-stressors, in combination with political and social marginalization, create the kind of forced migration, which falls under the ambit of international refugee law. Even as predominant legal opinion discounts this possibility, it has been our contention that a purposive approach to treaty interpretation might allow certain asylum claims within the context of climate-related forced migration to be sustained.

With regard to Pakistan, policy responses must, as an absolute minimum, build on an understanding of the existing patterns of internal and international migration as they already have some links with environmental change. The country needs more robust census data collection that allows for environmental factors to be accounted for as possible causes for internal migration. The absence of a national migration policy is a glaring gap, which could lead to reactive interventions in future rather than a planned

response to anticipated climate change challenges. Finally, it is high time migration-related concerns are mainstreamed into development and climate change policy, and the potential of migration as an adaptation response and as a positive contributor to adaptive capacity is officially recognized.

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