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Deconstructing the climate migration myth: Assessing the impact of the 2022 floods on the movement of local populations in rural Punjab

Rabia Chaudhry and Eva Youkhana

The link between climate change and migration has gained considerable recognition in recent years. Yet, it remains a complex and highly divisive issue in policy and academic circles alike. Fanned by populist politics and partisan media, misleading claims of large-scale migration of climate refugees from the Global South to the Global North continue to emerge.^{1 2 3} The argument is a simple one: as global temperatures continue to rise, the resultant extreme weather events such as floods, extreme temperatures, earthquakes, cyclones, land degradation, coastal erosion, rising sea levels, and droughts, etc. will be major drivers of mass migration from the Global South to the Global North (Christian Aid, 2007) (Adam, 2005).

Ineffective and delayed policy making to face the impacts of global warming at the individual state level and by the international community is a valid cause for public concern and global protest. However, employing imagery depicting vast numbers of climate refugees migrating from the Global South to the Global North to highlight the issue can be considered intellectually dishonest (Haas, 2020) (Boas I. C., 2019)⁴ and based on myth rather than facts (Betts & Pilath, 2017) (Nash, 2018). Such discourse is misleading because it takes climate change as a starting point and then works backward by building a narrative of *en masse* migration based on linear trajectories that too, are justified with anecdotal cases rather than concrete evidence. It is dangerous because it distracts focus from migration as an adaptation technique and shifts it to migration as a security threat to nation-states (IOM, 2009)^{5 6}

People's movement – or even lack thereof – in response to changing climate falls across a complex spectrum of sudden-onset events and slow-onset processes which act together to cause destruction of homes and assets, decrease crop productivity and biodiversity, forcing people from their lands and livelihoods (Zickgraf, 2020). Responses vary as well. Whereas some [can] make a hasty getaway when confronted with disastrous events, others make a calculated / considered response to gradual changes adversely affecting their livelihoods in the place of origin.

Pakistan is one of the most vulnerable countries to climate change and climate-induced migration.⁷ While fears regarding its people being forced to flee for the Global North in response to the 2022 floods found its place in international policy circles, questions regarding how extreme and irregular climatic disasters impact the local populations' adaption and migration are yet to be asked. So far little research has been done to ascertain the nature and extent of migration linked to climate change in the context of Pakistan. This research aims to bridge that gap. Using the 2022 floods in Pakistan as an example we ask: what is the impact of extreme and irregular climatic disasters on outmigration of the local population? This is important and timely as domestic and international climate policy frameworks could benefit from localized evidence-based knowledge as opposed to falling back on 'climate reductive discourse' of migration and development interventions (Dewan, 2023).

Structure of the Paper and Methodology

This paper is divided into four sections. Section I distinguishes between multiple terminologies used to describe people who are on the move in response to climate-related factors. As shall be demonstrated below, discussions regarding the relationship between climate and migration often get sidelined by the debate on who qualifies for which label. We therefore begin by delineating from the outset, the definition of a migrant pertinent to the discussion at hand. For additional clarity, Section I also differentiates between the terminologies pertaining to diverse climatic phenomena by using the definitions thereof provided by the Intergovernmental Panel on Climate Change (IPCC) and the United Nations Framework Convention on Climate Change (UNFCCC).

Using data sets from international think tanks and policy institutions and literature review, Section II explores how one-step formulas that attribute migration from the Global South to the Global North to climate change alone, propagate a reductive discourse. It shows that this not only misconstrues the local socio-political landscape but also diverts attention away from multi-faceted drivers of migration; in particular those unique to specific populations.

The research relies mainly on desk review for data extraction – be it in the form of literature on the subject or local data sets regarding dynamics of local populations, their demographic make-up, and sub-sets, migratory patterns over the years especially in response to climatic disasters, etc. The research also relies on data sets collected from both the Pakistan and the Punjab Bureau of Statistics in the form of the Pakistan Population Census (2017), Labour Force Survey (2020-21), Pakistan Social and Living Standards Measurement Survey (District Level) (2019-2020), Punjab Development Statistic (2022) and the Multiple Indicator Cluster Survey (Provincial Report) (2017-1018). Using this empirical evidence, Section III explores the diverse ways in which populations affected by floods in Pakistan, responded thereto. Using the 2022 floods as an example, this research tries to ascertain their impacts on local populations and the extent to which migration was a response.

Throughout the research, we identified limitations concerning both the accessibility and comprehensiveness of available information. For instance, the results of the latest Census, which was conducted in February 2024, are yet to be published; they are expected to be tabulated and made public by 2025. Moreover, whereas there is no data being collected on the effects of climate change specifically, data on climatic disasters and migration are collected separately and as two distinct categories. This is not just an issue in Pakistan, but a shortcoming of climate-related migration discourse overall.

The gaps in available information were filled in by relying on some primary data collected through expert interviews. This also helped develop an understanding of local reality and responses. The intention was to build a comprehensive and robust picture of the on-ground impacts of climatic disasters on local populations in juxtaposition with the empirical data evidence. We therefore begin by identifying the governmental and non-governmental offices responsible for managing climatic disasters and their aftermath. These include NGOs, Disaster Management Authorities (both National and Provincial), the Meteorological Department, the Irrigation Department, the Agriculture Department, and the civil Administrative Services responsible for supervising evacuations and ensuring safety as well as managing the support and working with the people at the ground level.

The subsequent analysis is based on information gathered through open interviews which are guided by the theoretical framework scrutinizing the impacts and implications of extreme and irregular climatic disasters for local populations' migration. This section explores the extent and nature of climate-related migration, how this is distinct from ongoing phenomenon of rural-urban migration, the short- and long-term priorities of the local populations regarding both quick on-set climatic disasters and slow on-set climate change. It also includes the role of local knowledge and perceptions

in informing people's responses and the policy and administrative frameworks guiding governmental measures.

Lastly, Section IV challenges the migration myth that promotes a simplistic and univocal relation between climate change and outmigration and evaluates if disaster-induced migrations are permanent or temporary in nature in that people wish to return home as soon as the immediate disaster conditions subside for a broad spectrum of reason.

Section 1: Conceptual Definitions

As the frequency and intensity of climate-induced natural disasters continue to increase, it raises fundamental questions regarding where and how we live. However, despite an increasing acceptance of the nexus between climate change and migration, misleading claims regarding mass migration induced by climate change, especially the South-to-North movement of 'climate refugees' continue. This is chiefly because there is still no international consensus on how to define the movement of people in response to climate-related factors (Ferris, 2020) (Zickgraf, 2020).

When the issue first started gaining traction, the two terms initially used were 'climate refugees' or 'environmental refugees' (UNEP, 1985).⁸ This category was constructed with the vision of an apocalyptic future in which those adversely affected by climate change, due to no fault of their own, needed to be protected and given options to legally settle elsewhere. The geopolitical context was the reluctance of the United States, Australia, and other governments to accept climate change as a problem at the time (McNamara & Gibson, 2009).

This highly evocative terminology had to be soon abandoned because refugees have established legal status in international law and have incontrovertible rights and duties vis-a-vis the incumbent states.⁹ Climate migrants not only did not meet the definition but also attracted critique from scholars of refugee studies. The argument is that the term 'climate refugee' distracts from and depoliticises the causes of displacement thereby divesting states off the obligation to provide asylum (Kibreab, 1997). Others argued that it deprived the affectees of the element of choice and built a simplistic narrative based on linear trajectories which diminishes the multi-causality of migration. Meaning "it is never just climate change. Climate change is a threat multiplier; it cannot be isolated from social, political, economic, environmental, and demographic migration drivers" (Zickgraf, 2020). Lastly, it does not capture the diverse ways in which people adversely affected by climactic changes choose to move -or not move. A simplistic recasting of migrants as 'climate refugees', plays down the centrality of migration to agrarian lives (Dewan, 2023) (Farbotko & Lazrus., 2012).

Instead of using the highly contested term climate refugees, we will be using the term climate migrants in this paper. We are relying on IOM's definition of climate / environmental migrants as "Persons or group of persons who for reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions are obliged to leave their habitual homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad (IOM, 2011).

As shall be demonstrated below, the above definition fits the type of population movement under discussion. Furthermore, while it allows us to establish a link between migration and climatically induced disastrous events, it creates space for making a case for migration as a multi-dimensional phenomenon. In cases where climate change is a major driver of population movement, it is usually compounded by social, economic, political, and structural factors. Climate change therefore does not directly displace people but rather exacerbates pre-existing socio-economic vulnerabilities which in turn cause displacement (Ferris, 2020) (Kolmannskog, 2012).

Vulnerability is ascertained by the degree to which a community is susceptible and [un]able to manage adverse effects of climate (IPCC, 2007). Lending human characteristics, the UN defines it as "the

characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of Hazards”.¹⁰

Hazard is a scientific term describing or categorizing natural or man-made events that can have disastrous and devastating impacts on people and communities. Disasters are caused when a community or people lack the capacity to cope with a hazard or its impacts using their own resources (Kelman, 2022). Disasters can be generated naturally, and technologically or can be man-made and expose vulnerabilities of the community in question (IFRC). The frequency, complexity, and severity of disasters can be exacerbated due to factors such as “climate change, displacement, conflict, rapid and unplanned urbanization, technological hazards, and public health emergencies” (IFRC). Their effects can be lessened, however, by adopting prevention, adaptation, and recovery strategies.

As per the UNFCCC adaptation means “adjustments in ecological, social or economic systems in response to actual or expected climatic stimuli and their effects”. It includes procedural, practical, and structural changes to moderate both the potential damages and opportunities linked with climate change (UNFCCC). To effectively respond to current or future impacts of climate change, policy measures - that include both planned and autonomous adaptation strategies - need to be developed at the country and the community level (IPCC, 2018).

Climate Migration: Fact or Fiction?

There is already considerable evidence challenging linear explications of climate migration. Empirical evidence shows that even when confronted with a disaster, most climatically vulnerable populations do not move (Mallick & Schanze, 2020) (McNamara & Gibson, 2009). According to data from the International Organisation for Migration (IOM) and the Centre for Research on the Epidemiology of Disasters (CRED), circa 85% of people threatened by natural disasters [between 2008-2016] did not permanently relocate. Similarly, a study conducted by the UK Department for International Development (DFID) in 2018 concluded that even when confronted by natural disasters and situations of environmental degradation, people largely prefer to stay home (DFID, 2018).

Research shows that even with respect to disaster-affected areas, a mixture of climatic, socio-economic, cultural and political factors come together to influence migration (Black, et al., 2011). In 2011 a report published by the UK Government of Science on the linkages between migration and environmental change argued that environmental change as a “limited, or unpredictable, impact on migration” (Foresight, 2011). They too concluded that migration is caused by a confluence of a range of socio-economic and political factors. Using the Asia Pacific’s example, McNamara shows that climate is never the sole factor contributing to migration. The population movement is a product of a confluence of factors, of which climate change is one, but “other factors such as the desire for greater economic security are also influential” (McNamara & Gibson, 2009) (Adams, 2016). In short, climate change cannot drive migration on its own, but it is linked to specific pre-existing vulnerabilities.

Therefore, even when climate change does play a role in influencing migration, it remains difficult to determine the extent of its impact. The link between the two is indirect rather than direct. As aforementioned, it is never just climate change. Boas et. al argues that even “when people have to move in the event of a cyclone, it is not always clear to what extent the cyclone can be attributed to climate change” (Boas I. C., 2019) (Betts & Pilath, 2017) (Foresight, 2011).¹¹

While climate change has adverse ramifications for whole communities, socio-economic inequalities within them make certain groups more vulnerable. When this vulnerability reaches a “threshold point”

making life and livelihood in situ unsustainable, only then do they decide to - or are forced to decide to – move (Jayawardhan, 2017).

Using Bangladesh's example, Findlay and Geddes challenge the popular idea that migration in the country is a direct consequence of rising sea levels. Instead, they show that it is a consequence of the general urbanization process which is informed by the need for better education, access to the service sector, and employment opportunities created by industrialization. In fact, they go so far as to argue that even if the destination urban areas are more environmentally vulnerable than the place of origin, people would still migrate in search of improved livelihoods (Findlay & Geddes, 2011).

Even within the Pakistani context, where climate modeling estimates that nearly 2 million people will be climate migrants by the year 2050, these are a) expected to be internal migrants (as opposed to climate refugees heading straight to the Global North) and b) experts are quick to point out that these migrations are not just climate-induced, "they also coalesce with longstanding histories of inequitable land use and land ownership" (Joles, 2022).

In short, it is empirically impossible to categorize 'climate migrants' as distinguishable from 'non-climate migrants'. Predictions regarding mass climate migration are therefore inherently flawed (Gemenne, 2011). This is because they are mainly drawn on a simplistic and linear relationship between environmental change and mass migration. Whereas a series of economic and social factors must converge for people to decide to move. Forecasts of climate migration instead are not only highly speculative, in that they are not corroborated by facts, but are based on simplistic quasi-scientific reasoning. They work with the assumption that (all) populations affected by climate change-induced environmental stressors will inevitably move away from their homes / places of origin (Haas, 2020).

Migration: A Buzzword?

While climate change is a global phenomenon, its impacts vary across national and international geographies. It is therefore experienced at a localized, oftentimes individual level. Responses differ accordingly. In a country as large and diverse as Pakistan, where the geographical vulnerabilities and socio-economic realities vary every couple of 100 km or so, the nexus between outmigration and climate change cannot be summed up by a simplistic one-step formula.

(Weisser, Bollig, Doeverspeck, & Müller-Mahn, 2014), caution against a simplistic cause-and-effect relation between issues like climate change and migration as it extends a mechanistic understanding that regards adaptation merely as a 'response' in terms of "social-ecological engineering". Instead, they stress adopting a comprehensive approach that lends centrality to the political character of adaptation. This approach not only allows us to study the complexity of narratives and practices of adaptation (migration in our case) but embed it in localized environments for effective policy making.

Policies look towards diverse potential actors and audiences for endorsement. Policy making in developing countries continues to take its cues from global agenda-setting and is heavily motivated by international aid. Hegemonic framing of issues (Crist, 2007) relating to climate change which awards centrality to buzzwords (Cornwall, 2007) such as 'climate-induced South to North mass migration' certainly evokes approval and a promise of delivery from policy makers at the global level. However, it diverts attention from localized reactions (Jessica Barnes & Dove, 2015) and responses based on regional realities such as 'climate displacement in an agrarian world already on the move' (Dewan, 2023) (Kelley, Shattuck, & Thomas, 2021).

Section 2: Pakistan Flood 2022

In August 2022, Pakistan witnessed one of the severest floods in its history. Unusually hot weather in the Spring of 2022 led to two consecutive heatwaves in May and June (Otto, et al., 2023) (Rosane, 2022). A strong thermal low was created over the country which produced heavier rainfall. The heatwaves also triggered glacial flooding in the Gilgit-Baltistan area in the north of the country thereby further flooding the River Indus (Director Meteorological Department, 2024). The proportion of destruction caused by the glacial flow was far less than that caused by the rainwater (Mallapaty, 2022) - Pakistan received 243% more than the usual rainfall. This was the wettest August since records began in 1961 (PDMA, 2022) (Otto, et al., 2023). Just to lend perspective, the rainfall received in just the month of August 2022 exceeded the total normal monsoon seasonal rainfall by 37% (PMD, 2022).

The scale of destruction was far more than any witnessed by the country before. Approximately 33 million people (1 in 7 of the total population) were impacted by the floods (UNICEF, 2023). Nearly 1500 people were killed. Critical infrastructure, including agricultural land (Lederer, 2022) and private homes was destroyed. 1.7 million houses were destroyed, rendering 2.1 million people homeless (USAID, 2022).

The 2022 floods were not only of an unprecedented scale in terms of devastation caused but were also a watershed moment in climate policy making, both globally and locally. They raised critical questions regarding the relationship between extreme weather events and their implications for the local populations in the Global South.

The government of Pakistan and international media alike portrayed it as an example of the kind of havoc that climate change is capable of wrecking, especially on the vulnerable communities of the Global South. The state's official and immediate response was to identify itself as a victim of climate change and make calls for climate justice, mainly in the form of reparations, on all international fora. The then Minister for Climate Change did not hold back in declaring Pakistan ground zero of the climate crisis (The Express Tribune, 2023). The state was very clear with its message to the world that whereas Pakistan is responsible for less than 1% of global emissions, the loss and damage caused by the floods are a cost it is having to pay for "the carbon emissions of others" (Baloch & Taylor, 2022). The then Prime Minister was quite vocal at the local and global forums in declaring the country victim of something it had "nothing to do with". His vociferous forthrightness on the matter led to him being invited to assume the vice chairmanship of COP27. The posturing from the state's end was of being at the receiving end of global climate injustice (Wyns, 2022).

The Global North responded by pledging \$500 million to Pakistan to mitigate the havoc wreaked (Raza, 2022) but the flooding also raised anxieties regarding the mass migration of climate refugees from the disaster-struck region to the Global North. Yet again, the response of foreign states and international policy organizations centered around the potential migration as a security threat (Burke, Saccoccia, Schmeier, Faizee, & Chertock, 2023). A Report issued by the International Security Advisory Board (ISAB), a Federal Advisory Committee to the Department of State, USA, explicitly identifies climate-induced disasters, such as the 2022 floods in Pakistan, as drivers of "displacement, migration, and refugee movement" and therefore a security challenge to the USA (IASB, 2024) (Rezzonico & Sikorsky, 2022).¹²

Section 3: The impact of large-scale flooding on the movement of local rural population

A 21-year longitudinal study of Pakistan by Mueller et al. (2014) shows that higher levels of rainfall or a quick onset climatic disaster like flooding did not have any impact on migration of affected populations. Results consistently show that it is not singular water vents, however devastating they might be, that inform people's movement. In fact, it is cases of long-term and slow onset effects of climate change, like the rise in temperatures in the winter season, which are strongly correlated with migration. High temperatures in the winter season can potentially destroy one-third of agricultural yield. A consequential decline in agricultural productivity, especially of poor and marginal cultivators, adversely affects incomes in the immediate short term, but more significantly, erodes livelihoods in the long term (Saeed, Salik, & Ishfaq, 2016) (Majid & Zahir, 2014). It is therefore long-term loss of livelihoods that informs the decision to move as opposed to a quick onset of short-term climatic disasters like flooding.

Flooding is a seasonal reality

With 44% of the workforce engaged in the agriculture sector, it is the largest employer (68% in rural areas). Rain-fed areas practice subsistence farming whereas in semi-arid zones (which have sustainable access to water) irrigation-based farming is common. Poorer communities, who mainly reside in arid or semi-arid zones are involved in pastoralism (Saeed, Salik, & Ishfaq, 2016). Eighty-six % of the farms are owned by small-scale farmers (less than 10 acres in size). As the country is predominantly semi-arid, seasonal flooding is not only a recurring event, but it is considered an important source of water by the poorer farmers who do not own prime land.

Vulnerability to flooding remains high nonetheless (Nazeer & Bork, 2021). The degrees and devastation caused vary on a yearly basis (Kelman, 2022). So, for instance, while there will be small-scale flooding caused yearly due to the monsoons, every now and then there are large-scale events like the 2022 floods as well e.g. in 2010 and 2015. Experts estimate that in addition to yearly flooding caused by overflowing of the riverbanks an average farmer in Pakistan, especially Punjab, witnesses some form of water-related disaster every two to three years. These can be in the form of river flooding, hill torrents, mudslides, etc.

Floods are therefore an important part of the local psyche and lived practices of the local populations and do not necessarily translate into migration being adopted as an adaptive strategy. We see the same pattern in the 2022 floods in terms of people's decision to migrate. Even though the exact total number of displaced persons across the country remained unconfirmed, it was estimated that approximately 8 million people were displaced by the 2022 floods. Peak flooding was between 12 and 30 August 2022 (USAID, 2022). According to the USAID Factsheet, as of 07 September 2022, approximately 635,000 people were still sheltering in the relief camps managed by the Government of Pakistan. By 30 September 2022 the USAID Disaster Assistance Response Team was already reporting that out of the [approximately] 500 households who had been sheltering at the state-provided camp in the immediate aftermath of the flood, only 180 remained (USAID, 2022). The remainder had returned to their respective areas of origin as early as the end of September – just one month after the flood. Those who were left behind were requesting funds from USAID's Disaster Response Team for transportation and help to repair their houses upon return.

Disaster Resilience or a way of life? the lived realities of populations affected by floods

Movement - of any nature - is not entertained as the first option by local populations for a number of reasons. Chief amongst them is localized and traditional knowledge regarding floods. So much so, that Disaster and District Management authorities say it is extremely difficult to even evacuate people even after flood warnings have been issued.

Generation of local rural populations in Pakistan have developed resilience and adaptive strategies to managing flooding events. For instance, they have places and backup destinations to move to protect themselves and their livestock as soon as the flood approaches. When the water subsides, they move back. Whereas acreage of crops might be destroyed by the disaster, it does not translate as the land being destroyed. In fact, colloquially it is called golden soil. Flood waters bring the soil from riverbeds along with it which is very fertile. So, even if the crops are destroyed in the floods, better yields are expected in the subsequent years.

The socio-economic status of people impacted by floods is an important variable in the decision to move. Landholdings of those who are economically better off are not only far away from flood-prone areas thereby avoiding the brunt of losses to begin with, but they are able to recover from the economic loss quicker as well. Additionally, because of easy access to governmental resources due to their social standing, they are able to reconstruct damaged infrastructure like tubewells, canal structures, houses, etc. relatively faster.

The relatively poor people are the ones who mostly reside and own land close to disaster-prone areas, be it tidal flooding, river erosion, etc. The marginalized groups therefore are not only worst hit by climatic disasters but, because of a limitation of resources, take longer to adapt to destruction caused by extreme water events. Land asset ownership is an extremely important factor informing migration in this instance too. No matter how small, agricultural land is the principal source of income and an integral part of people's identity.

Here a distinction needs to be made with those who do not own the land legally but have been living and cultivating encroached land. As is in the nature of natural water flows, rivers across the country have either altered their course or have receded with time. The land it [water] has moved away from technically qualifies as a riverbed or embankment and is a) government-owned and, b) is not safe. According to experts from the Punjab Irrigation Department¹³, even if the river has receded or not taken that particular course for a hundred years, every time there is an excess of water – be it due to rain or heavy glacial melt – it will resume its traditional course. They refer to it as water having its own memory. And 'once in a hundred-year events do not necessarily occur after a hundred years. This land is therefore inherently disaster-prone and should not be used for private residential or agricultural purposes. Yet, there is a sizeable number of populations across the country living on encroached property in these [disaster-prone] areas. For instance, River Sutlej flooded in 2023. Those who were living on the land which technically qualifies as riverbed land and therefore cannot be owned, simply refused to evacuate because they were afraid of losing it on their return.

As flooding is a relatively regular event, local populations not only have adaptive strategies in terms of dealing with the physical effects of the floods in terms of where to shelter, how to save livestock but also have resilience patterns of how to manoeuvre through the state apparatus as well. Women, children, and elderly relatives are evacuated to the state-provided camps nearby not only for their safety but also because it helps qualify for the reconstruction aid that is provided by the state afterward. Not leaving means difficulties in claiming governmental help – both financial and otherwise. But as the land can also not be abandoned for fear of loss, a young male member of the family is left behind to ensure continued possession.

After the 2022 Floods, anybody who owned land, whether small or large, went back to it as soon as they possibly could (USAID, 2022). But here again, we see land ownership being an important factor in the migratory patterns. There is a large nomadic population indigenous to the south of Punjab. Rajanpur and the D.G Khan areas – which are in the South of Punjab – were the worst hit by the [2022] floods in the province. Government sources say that whereas land-owning affectees sought the state's help in reconstruction, the nomad population requested to be settled elsewhere. In short, as they did not own land to begin with, migration was an available option, and the floods provided an opportunity to pursue it.

There are social implications of movements in addition to the economic ones. Relocation entails giving up familiar and inherited means of livelihood thereby severing connections with history / roots. Being away from and out of the home for too long runs contrary to the cultural and religious value systems also. Taking shelter with relatives or residing in camps might be a good short-term strategy, but bad tribal etiquette for the long term.

Migration as a livelihood strategy of rural population under increasing stress (short-term migration)

Climate reductive interpretations not only fail to capture the changing dynamics of migration and urbanization in a young and developing country such as Pakistan but also the importance of seasonal labor migration as an agrarian livelihood strategy in South Asia – both historically and in the present (Rogaly et al. 2002).

There are two principal crop seasons in Pakistan – Rabi (winter crops) and Kharif (summer crops). The sowing season for Rabi is in October-December and harvest is April – May. Kharif crops are sown in April – June and harvested in October – December. Agriculture work is usually available during the planting season and during harvest. Seasonal labor migration remains an important feature of Pakistani rural / agricultural communities. Laborers move / migrate back to the agricultural land for these seasons. At one point in time, they used to be paid the crop (rice or wheat) as payment which would sustain the family. Now payments are in cash due to an overall monetisation of the economy. In non-harvest / sowing seasons they work as rickshaw drivers, daily wage workers, and other unskilled forms of labor in the urban centers.

37.4% of the country's labor force is employed in the agriculture sector (FAO, 2024). 64% of the rural population is engaged in agriculture; 58% of them are smallholder farmers owning less than 2 hectares of land (S, H, & EMBP, 2023) (Bureau of Statistics, 2014-17). Even though the agriculture sector has historically been the primary source of revenue for the country, its share of the GDP has been steadily declining. It reduced from 60% in 1949 to 29% to 31% in 1978–79, and still further to 20.8% by 2014 (Pakistan Economic Survey, 2013-14).

Reasons for decreasing dependency on agriculture as a main source of income are embedded in an inadequate policy infrastructure. They vary from a failure to keep up with technological advancements, and insufficient measures to ensure water availability, to poor credit transfer schemes. The demographic constitution of the country is also rapidly changing. Sixty-four % of the population is under the age of 30 (LFS, 2020-21). This naturally contributes to a decline in agriculture as a primary source of livelihood as the globalized youth aspires for better education and employment opportunities than those available in rural areas. Additionally, reduced incomes from farming due to even further reduction in landholding size because of inheritance structures is also a factor in diminishing dependence on the agriculture sector.

The most reliable and comprehensive sources of data regarding migration in Pakistan are the Census and the Labour Force Survey. Both have their limitations, however. For instance, both regard a person as a lifetime migrant if he or she is enumerated at a place different from their place of birth. The Labour Force Survey further disaggregates data between rural and urban locations, but it too takes the place of birth and the last place of residence as the key indicators.

There are some micro-studies available regarding a few districts in Punjab. A study by SDPI makes the case that one of the most significant factors of migration in rural areas of Punjab are lack of employment opportunities in areas where the main source of income is rainfall-dependent farming. Due to changing climatic patterns, income from farming is becoming increasingly unpredictable (Mehmood & Syed, 2015). Even though this is a slightly dated study, it provides an essential insight into the link between migration and climatic change vis-a-vis the socio-economic conditions of agrarian communities.

Poverty levels also vary across the country as well. Even within the province, northern Punjab not only has stable weather conditions but more economic opportunities are available in the urban centres adjoining the rural areas. Seasonal migration is a possibility. Should the heat stress reach a point where there is no option but to abandon the land, there are skilled and unskilled jobs available in neighboring urban centers.

The south of Punjab, which was the worst affected by the 2022 Floods, is doubly trapped. Not only does it geographically lie in an area where all the rivers converge, thereby increasing the chances of flooding, but it has two extreme weather systems. Hence it is more vulnerable to climate change, both in terms of extreme water events and heat stress. There are no urban centers offering job opportunities as well. Seasonal migration is not a possibility let alone having the networks and resources to permanently move even if it is to the nearby town.

Rural-Urban Migration in Pakistan

In developing countries, climate-induced migration and rapid urbanization are interlinked (ADB, 2012). Discussions linking migration in agrarian communities with climate change need to take into account the changing political economies and the importance of migration as a livelihood strategy.

14.5 million people are estimated to have migrated from rural areas to urban centers in Pakistan between 1998 and 2017. This figure does not include external migration figures. Out of the total 20 million people who migrated over this period, internal migration is estimated to be in excess of 70% (Hamid, n.d.). Whereas the urban economy accounts for 78% of the country's Gross Domestic Product (GDP), two-thirds of the population still lives in rural settings (WB, Pakistan: Country Snapshot, no. 91629, 2014) – 62.27% of the total population lived in rural areas as of 2022 (World Bank, 2022). With an urbanization rate of approximately 3% (Kugelman, 2014) there is still no clarity on what proportion migrates internally (to urban centers) due to climate change. This is particularly significant as rural livelihoods are largely agrarian. Climate-induced changes that have adverse ramifications for agricultural productivity can be a catalyst for migration (Mueller, Gray, & Kosec, 2014). Secondly, as aforementioned, climate change acts in combination with the socio-economic, and political determinants of migration.

Historically, the most favored destination countries for international migration from Pakistan have been either Saudi Arabia or the United Arab Emirates (WB, 2018). As a predominantly agrarian society, Pakistani migrant workers mainly engage as low low-skilled workforce in the Middle East. Moreover, international migration is a resource-heavy endeavor not only in terms of the high monetary cost of

migration (which includes visas, work permits, medical exams, air tickets, and other documentation), but requires language skills and a robust social network. Lack thereof hinders the access of people from poorer socio-economic groups to international migration. In the case of rural populations, the lack of resources has a multiplier effect in that they have fewer social networks in the Global North, do not possess the language skills and due to limited skills and lack of education are unable to participate in the relatively skilled workforce required in the developed countries.

Government projections suggest that by 2020 more than half of Pakistan's population will be residing in urban centres (GoP, 2014) however, the interlink between rural-urbanisation and climate migration is yet to be established.

Section 4: Conclusion

The link between climate change and outmigration has found international recognition in political debates. Migration has been a key policy focus of IOM's agenda. Climate mobility has been included in the United Nations' global policy process under the Framework Convention on Climate Change (UNFCCC) and the Global Compact for Safe, Orderly, and Regular Migration. The latter identifies climate change as an "important trigger or mobility" (Ionesco & Chazalnoel, 2018).

Discussions on the relationship between climate change and migration often attract attention in the wake of particularly destructive climatic disasters; a case in point being the 2022 floods in Pakistan. However, attempts to make sense thereof are often deeply embedded in the pre-existing climate anxieties that align with the widely shared belief that climate change will lead to mass migration (Haas, 2024). Consequently, they simply end up reifying the prevailing discourse.

By invoking the specter of the South-North mass movement, climate change has been turned into an urgent security threat linked to migration. Disastrous events like the 2022 Floods easily capture the collective imagination and provide a foundation for fearmongering. However, concentrating on policymaking that restricts migrants, distracts the focus from a development strategy in countries of the global south such as Pakistan. The focus on flood relief programs crowds out the important role of slow on-set climatic changes like heat stress, and water scarcity in lowering farm and non-farm incomes and spurring migration. There is a slow dismantling of rural resilience due to long-term and slow onset of climate change combined with debt-induced infrastructure and policy-making that should be the focus of policy making.

This is not to say that there is no link between migration and climate-related extreme events in Pakistan. Long-term decisions to migrate are definitely affected by climate change. As argued above, heat stress depletes resilience far more effectively than flooding events. And the country is far more vulnerable to heat stress. Local populations are more likely to respond to slow on-set heat stress by moving as opposed to quick on-set flooding events. There are established localized resilience strategies in place with respect to floods. However, the rise in temperatures and droughts have significant impacts on crop yields and therefore incomes - especially winter crops like wheat, and high-water consumption crops like rice and cotton. Rural populations are compelled to move to urban settlements as an adaptive strategy. Even then this is internal migration. Secondly, the popular discourse overlooks that short-term migration is an essential part of agrarian communities' coping strategies to extreme climatic events. Third, and more importantly, it is almost impossible to ascertain the extent to which this migration is caused by environmental factors such as heat stress and the urbanization of developing countries.

Endnotes

¹ The United Nations Framework Convention on Climate Change (UNFCCC) calls for an urgent need to avert, minimise and address climate displacement.

² United Nation Security Council adopts a more Malthusian stance in that it perceives climate displacement as a looming security crisis (Boas I. , 2015).

³ A Horizon 2020 research funding call in 2015 gave the example of climate migration as an existential threat to European Security from Third Country climate driven crises (CORDIS, 2015).

⁴ Boas et. al argue that “the influence of this narrative is considerable, with ‘climate-induced migration’ now a common rationale for measures to strengthen and protect national and regional borders in the Global North” (Boas I. C., 2019)

⁵ Boas et. al show that there is considerable influence of this narrative in policy circles. As a result, “‘climate-induced migration’ is now a common rationale for measures to strengthen and protect national and regional borders in the Global North (Boas I. C., 2019). The European Union migration agenda explicitly aims to protect borders “with the intent to keep people in their places and minimize migration” (Trombetta, 2014).

⁶ The Congressional Report on National Implications of Climate Change draws a direct causal link between climate change induced intra and interstate migration and [potentially] diminishing security in destination countries (White House, 2015).

⁷ The Global Environmental Index 2021, issued by the environmental watchdog German Watch, ranks Pakistan as the 8th most vulnerable to climate change – both in terms of extreme weather as well as multidimensional socio-economic repercussions (Eckstein, Kuenzel, & Schaefer, 2021)

⁸ UN Environmental Programme Report 1985 made the first official mention of the term climate refugees.

⁹ The 1951 Geneva Convention Relating to the Status of Refugees defines a refugee as someone who is unable or unwilling to return to the country, they are a national of “owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion.” In short, it makes no mention of environmental disruptions or climate change.

¹⁰ “Terminology” The United Nations Office of Disaster Risk Reduction

Hazards according to IFRC are a “dangerous phenomenon, substance, human activity or condition. It may cause loss of life, injury, or other health impacts, property damage, loss of livelihoods and services, social and economic disruptions, or environmental damage. IFRC classifies flooding as a hydrological disaster that is caused by the “overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas that are not normally submerged.” Hazard Definition, IFRC

<https://www.ifrc.org/sites/default/files/2021-06/04-HAZARD-DEFINITIONS-HR.pdf>

¹¹ The point being, whereas the ensuing migration can be attributed to the climatic disaster (cyclone in this example), the cyclone may not be a consequence of climate change. The migration therefore cannot be ascribed directly to climate change.

¹² In addition to raising humanitarian concerns, Pakistan floods were seen to demonstrate how “global security hinges on water security” (Javaid & Sadoff, 2023)

¹³ The Punjab Irrigation Department is a governmental department operating at the provincial level. It is responsible for matters related to the irrigation of 21 million acres of agricultural land in the province of Punjab.

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