



**RESEARCH PAPER**

**Assessing Climate Change Induced Migration: A Communities' Perspective of District Chaghi and Kila Abdullah, Balochistan**

**Summayyah Rasheed\*<sup>1</sup> Syed Ainuddin<sup>2</sup> Shabana Faiz<sup>3</sup>**

1. M. Phil Scholar: Department of Disaster Management and Development Studies, University of Balochistan Quetta, Balochistan, Pakistan
2. Associate Professors Chairperson, Department of Disaster Management and Development Studies, University of Balochistan, Quetta, Balochistan, Pakistan
3. Assistant Professor, Department of Pakistan Study Center, Sardar Bahadur Khan Women University, Quetta, Balochistan, Pakistan

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**ABSTRACT**

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**\*Corresponding Author**

summayyah@gmail.com

The study was purposed assess the prevalence of climate change induced migration in Distrc Kila Abdullah and Chaghi. Total 160 of the sample respondents were interviewed during field survey. Sample size was chosen based on their respective population using proportionate allocation from each union council. Results revealed that, study area is experiencing migration among populations due to climate induced droughts and extreme weather events. People have migrated due to dry weather, no or limited precipitation leaving their lands dry and no agriculture activity. Most of the small land holders migrated to cope with the situation and manage their earning. The paper recommends the necessary mitigation measures such as, low delta crops, water reservoirs, rainwater harvesting, off season farming, effective irrigation mechanisms, trainings, and awareness to mitigate the impacts of climate induced migration and to respond to migration in the area.

**Introduction**

The changing new world have now started considering migration and climate change, though seasonal, circular, or forced migration generally is not a new word in literature. The impacts of climate change triggered events show association of climate and human and their relationship with regards to impacts is also clearly deliberated. Climate change is posing new challenges to economic, both social and environmental viability, especially in poor countries, where people cannot afford to adapt quickly (Momsen, 2010). Globally, economic losses due to climate change are up to 125 billion dollars yearly which is more than current world aid (Vidal, 2009). The expected consequences of climate change include greater variability in rainfall, erratic monsoon patterns, rising sea levels leading to loss of farmland and the spread of waterborne diseases.

Poor societies mostly women, borne the stress triggered by climate change that causes intensified competition over shrinking resources which may lead to migration as well as ethnic and class conflicts possibly developing and rising the violent conflict,

increased poverty and social imbalance. Although not all disasters are triggered by climatic events, however, frequent occurrence of disasters has weakened the country manifolds, placing it among ten most vulnerable countries to climate change (Maplecroft 2012; Malik et al. 2012). The effects of these hazards are particularly devastating.

According to Government of Pakistan (2010), Pakistan has experienced 16 major disasters resulting in enormous human and economic loss (GoP, 2010). The location and topography of Pakistan together with institutional, social and economic vulnerability have contributed to its frequent and severe experiences of natural hazards in the form of earthquakes, floods, droughts, cyclones, glacier lake outburst flooding, landslides, avalanches and resultant disasters (GoP, 2012). For example, heavy monsoon rains in 2010 caused severe flooding effecting 20.5 million people, leaving at least eight million homeless, and causing massive damage to infrastructure countrywide. The country had consecutive floods between 2011 and 2015 which badly affected agriculture, as well as infrastructure of health, education and other sectors (Nawab & Nyborg, 2017). The recurrent climatic disasters are not merely the outcome of heavy precipitation but unwatched deforestation throughout the country plays a significant role in accelerating the intensity of such events (Khan & Ullah, 2016; Ahmed et al. 2015; & GoP, 2014 2010).

Pakistan, largely depending on Agriculture, Livestock and Fisheries, trades, cottage and exchange business is one of such developing country that comprises of mostly dry and arid land. Literature revealed that events triggered by climate change specially climate induced disasters and change in weather patterns affecting the natural is forcing communities into permanent migrations. Irregular weather patterns, abnormal precipitation causing; rising of sea level, decline in water table leading to events like deforestation, overgrazing, and drought like situations. This leaves communities with dearth of resources, leaving no options for people specially farmers and their families to migrate for livelihoods

### **Literature Review**

According to the 2018 Long-Term Climate Risk Index Pakistan is the 7th most affected country by the impacts of weather-related events, as calculated through data available between 1997 to 2016. According to recent report of German Watch presented at CoP 25, Pakistan ranks 5th most affected country due to climate change. Annual averages during this period show a death toll of 523.1 lives lost per year and a yearly economic loss of USD 3 816.82 million. During this 20-year period, Pakistan also saw 141 extreme weather-related events. In 2016 alone, there were 566 climate induced casualties in Pakistan while the country suffered a loss of USD 47.313 million.

According to Sindh's Climate Migration Report Launched at Policy Dialogue/ Oxfam-IUCN report, Pakistan saw 1,800 people displaced due to disasters in 2017. The International Organization for Migration calculates the net migration rate in Pakistan in between 2015-2020 is 1.7 migrants per 1000 people. From statistics last updated in 2015, women constitute 48.9% of the migrating populace. Most of these migrants come from a low-income bracket and leave behind ownership of agricultural territory, which is mostly their only source of living, when they migrate from pastoral to urban settings.

As there is no letup in the rainfall, several district are currently in the grip of famine like situation (PDMA, 2018). On September 06, 2018, Pakistan Metrological

Department (PMD) issued a drought alert warning the situation in areas like Dalbandin, Gawadar, Jiwani, Panjgur, Pasni, Nokundi, Urnmara, Quetta and Turbat to become worse by the end of year 2018. According to PMD, districts Chagai, Noshki, Kharan and Washuk are badly affected with severe impacts on their agriculture and livestock sectors forcing the local population to migrate to different areas. Around 33% of local population have migrated to other different places.

Considering the additional research and more conclusions, the United Nations "Rio de Janeiro Earth Summit" in 1992 resulted in the formation of UNFCCC for addressing the climate change issues (UNFCCC, 1992). Later the adoption of Kyoto Protocol in 1997 (UN, 1998), Paris Agreement in 2015 (NRDC, 2017), and UN global conferences every year endorses that United Nations undertake and respect of the need for global response to the menace of climate change.

Having recognized the level of climate change induced migration the UNFCCC organized 15th and 16th conferences (COP-15 and COP-16) emphasizing on climate change and migration in 2009 and 2010, respectively. In 2012 at Doha, Qatar, conference organized by UNFCCC focused on Integrating Migration into Planning and Adaptation Strategies. Multi stakeholders and partners accentuated on the dire need to take up the issue of climate induced migration keeping multi stake holder partnerships and innovation to devise policies and common strategies. (UNFCCC, 2009a; & UNFCCC, 2010a).

Literature review revealed that there has not been any research on the subject of climate induced migration in the province. There has been some significant response related intervention for those who have fled from their houses due to unavailability of water after the prolonged spells of drought.

The greatest single impact of climate change could be the human migration (IPCC, 1990). The most widely repeated prediction being 200 million by 2050 where the underdeveloped are going to face the greater burnt of climate change and its impacts due to poor infrastructure, weak socio-economic condition, and governance gaps. In the mid-1990s, studies and reports claiming the forced displacement of up to 25 million people from their houses and leaving their land with environment being the topmost reasons including pollution, natural disasters, land degradation, and droughts. A steady rise in climate induced migration is taking place in the country, and it is often older parents, and persons with disabilities who are left behind in degraded environments, where they are forced to live their life on limited natural resources and in abject poverty (Oil Brown, 2007)

Balochistan province is situated in southwestern region of Pakistan with economy that primarily relies rain-fed and irrigated agriculture which itself is an on climate-sensitive sectors as well as livestock. Both having high dependence on and unsustainable exploitation of natural resources especially the groundwater. In this research, two districts are selected as area of study i.e., District Kila Abdullah and District Chaghi. Killa Abdullah district is located, 1,205-2,675 meter above sea level, in the north of Balochistan province. It is bordered with Afghanistan to the north, Pishin to the east Quetta to the east south having population of 757,578 while District Chaghi being the largest district of Pakistan and is positioned on the northwest corner of Balochistan, Pakistan. The border of district is triangular with Iran and Afghanistan with a population of 226,008. Both districts contain the history of regular drought,

water scarcity, low precipitation with other disasters like flash floods. Both districts have been selected for this study.

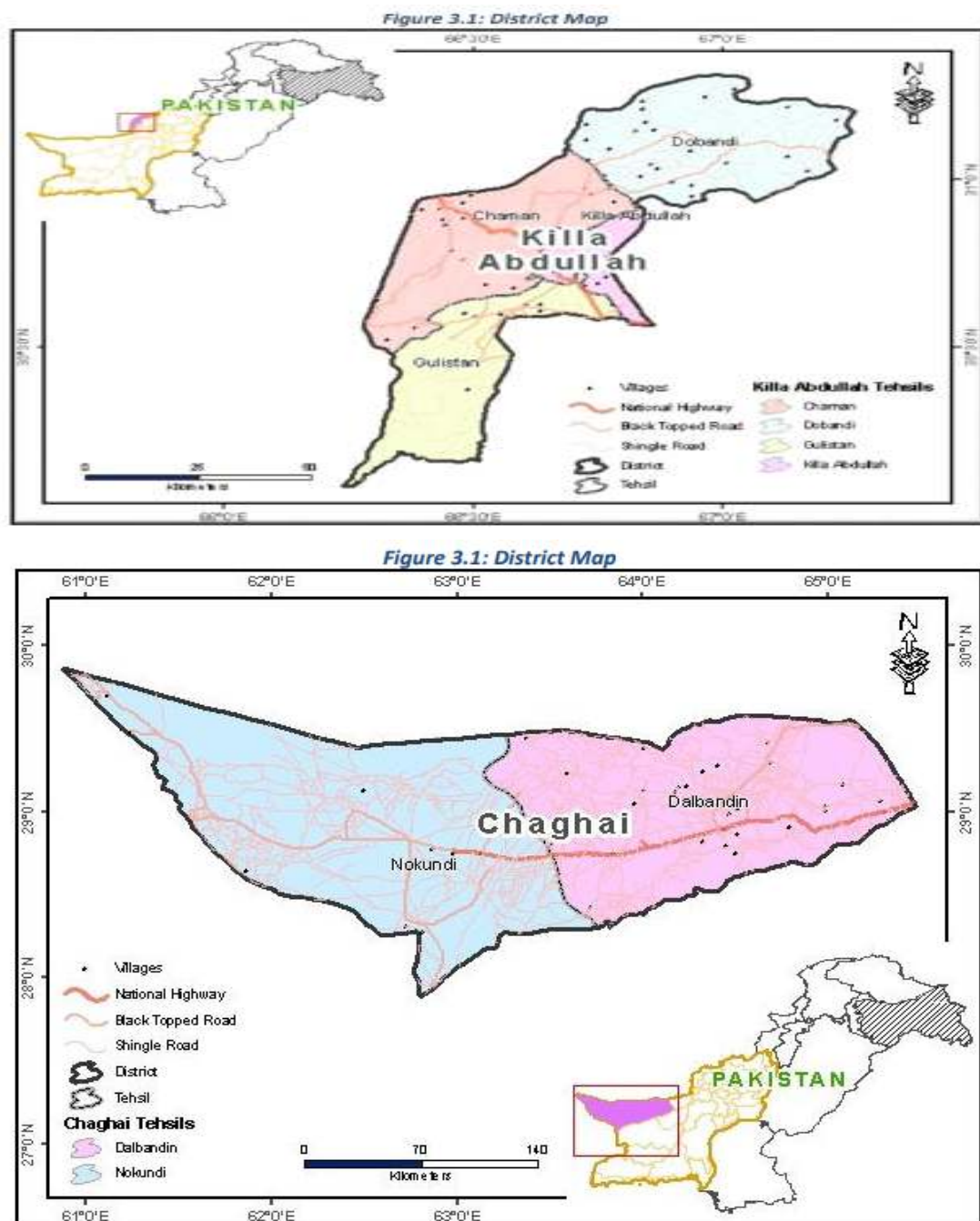


Figure 1: Maps of Districts Kila Abdullah and Chaghai

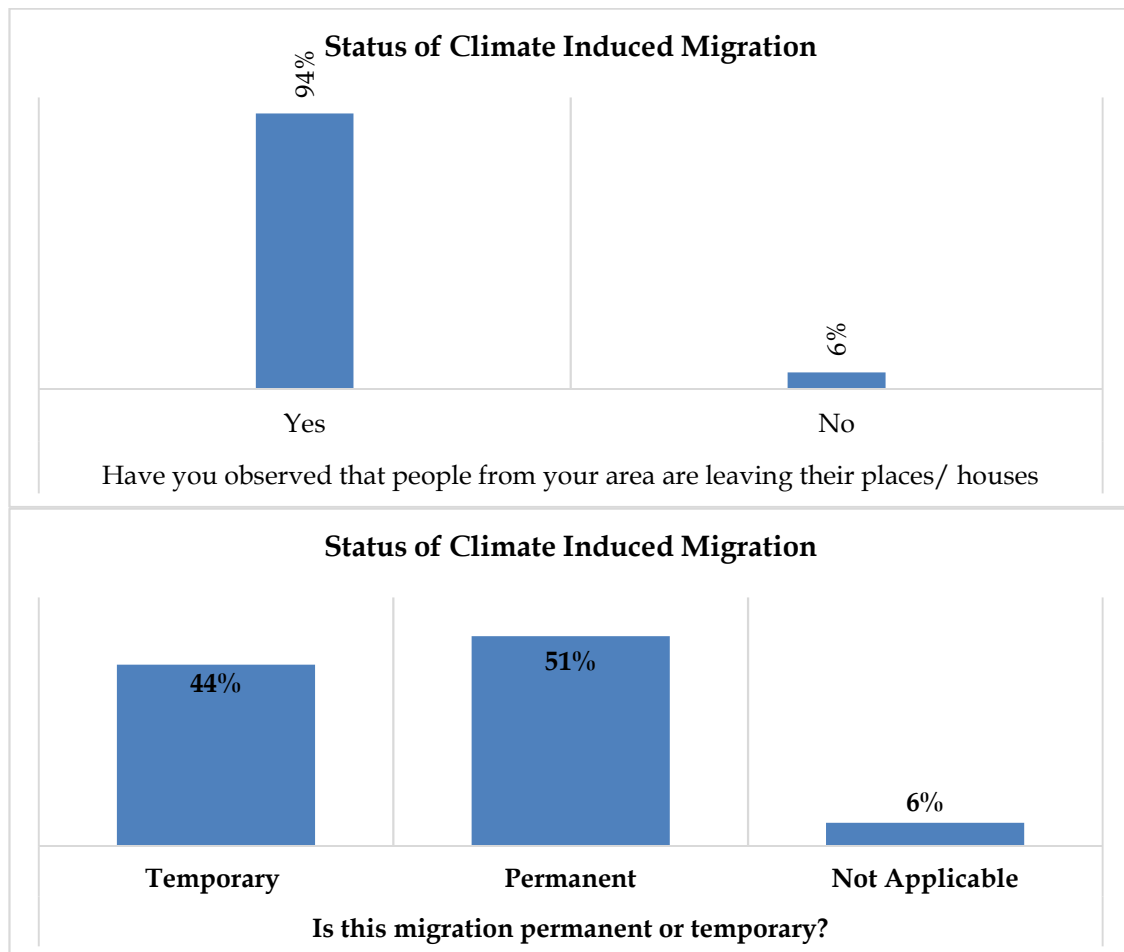
### Material and Methods

The methodology followed cross sectional and exploratory design of data collection based on secondary data review including review of abstracts, conference papers, research reports, journals, bulletins, books and directories, market reports, annual reports, organization’s record at internal level, broadsheets and newspapers & magazines, media. Primary data was also collected from two categories i.e., one mainly

and largely from migrated and 1 set from those not migrated in the study areas of Chaghi and Kila Abdullah. For Primary data collection, multistage purposive random sampling method was utilized following structured KII questionnaire. The systematic process followed (a) Selection of Union Councils; (b) Selection of Villages, and (c) Selection of HH and Interviewees. The final selection was based on the proportional allocation method. Since Districts' population was identified, therefore Arkin and Colton's Formula (1963) was used with keeping the Confidence level at 9% and 7% error rate. The following indicators reviewed and compared with the responses from KII for establishing link of climate induced migration was (1) Data talks about climate change induced migration, (2) Data reflects economic challenges as reason for migration, and (3) Data confirms Climate Change as contributing factor for migration. For analysis, interpretation and representation, statistical tools like percentages, frequency distribution were used in this study.

### Results and Discussion

In Pakistan, climate change poses a major risk to achieving the social, economic or environmentally sustainable development goals (Khan et al. 2016; GoP, 2012, KP, 2016). After the Paris Agreement's recognition of 'climate migration' and 'climate migrants' in their draft text, IOM acknowledged the existence of climate migrants. The IOM's working definition of who climate migrants are is 'non-normative' and 'non-perspective' and is not considered a legal standard but one that advocates its support for migrants in their plight as they escape climate change impacts.



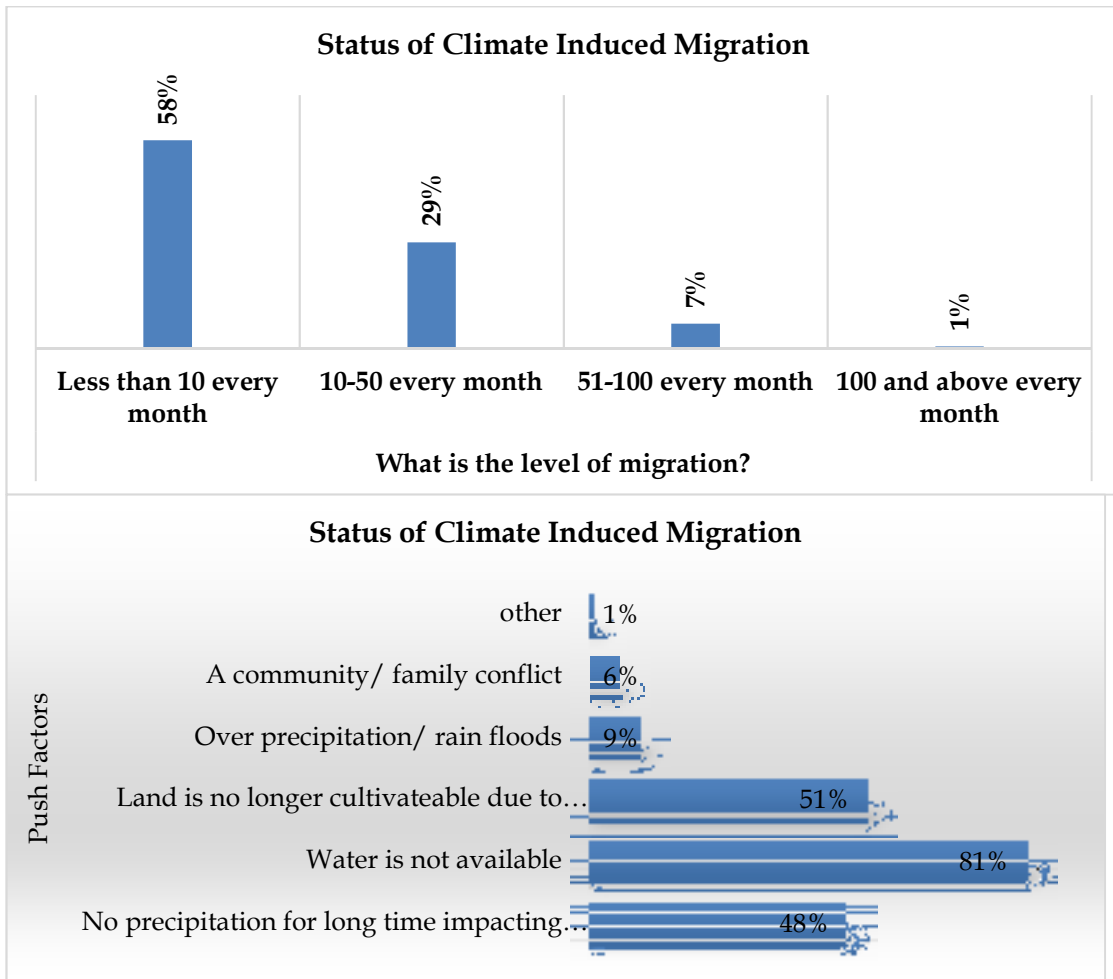


Figure 2: Status of Climate Induced Migration

Pakistan Climate Change policy of 2012 in its one clause only mentions about addressing migration as a policy measure that talks around creating short term ‘agro-based settlements in rural areas and fringes of urban areas’ to curtail rural-to-urban migration’. The implication of this para shows that migration of people is considered as rather negative notion by the state that they consider it to be stopped from taking place. According to the latest assessment report of 2022 by Intergovernmental Panel on Climate Change redaction show that the magnitude of climate change induced migration and human displacements may increase during the 21st century (IPCC, 2022).

**Discussion**

To assess the migration situation in the area, 4 main indicators were asked from the respondents as shown in figure 2. The indicators covered a) prevalence of migration, b) nature of migration, c) reasons for migration *push factors* and d) reasons for migration *pull factors*. As shown in figure 2 that 94% of people have observed that communities are migrating from their area while 51% say that it is permanent migration and those migrated have not returned and the household members reported that this is due to no precipitation for long time, even those migrating temporarily are not coming back. 81% confirmed that the duration of less or no precipitation has significantly increased in last few years resulting water shortage in the area pushing people to leave their lands/ homes. 48% reported the no precipitation for a longer

period and reported that the dry season has extended than before and it is increasing drastically resulting dried lands and reduced agriculture production and economic activity.

In the past, the relationship of the components - climate change and migration - has been explored in several ways, focusing on the impact on the environment due to refugee movements, while more recent studies have predominantly addressed the impacts of environmental changes on migration flows.

According to respondents, extreme weather patterns, reducing the water availability and shrinking viable land for agricultural production, and lingering dry spells have caused widespread migration within the study area in past decade. Though the majority of the respondents however responded with their own point of view and spoke in a personal capacity. It is also important to know that due to limited understanding of the phenomenon, the individual perspectives, and perceptions of those affected by climate change vary considerably. It is evident from study results shown in figure 2 that seasonal migrations are turning into long-term migrations. Displaced communities sometimes do not return back. Lengthy dry spells have led the rural population to migrate to barrage areas in order to seek employment, food, and water for their families and livestock. Forced migration is becoming more common as people have no option but to migrate. The study shows an increasing pattern of permanent migration in various parts of the area.

## **Conclusions**

In 2020, Pakistan took the fifth spot on the Climate Risk Index. High rising temperatures, increased intensity and frequency of weather-related disasters and events, melting of the glaciers and increased the variability of monsoon rains are high degree impacts being faced by the country. Balochistan province is situated in southwestern region of Pakistan with economy that primarily relies rain-fed and irrigated agriculture which itself is an on climate-sensitive sectors as well as livestock. Both having high dependence on and unsustainable exploitation of natural resources especially the groundwater. In the mid-1990s, studies and reports claiming the forced displacement of up to 25 million people from their houses and leaving their land with environment being the topmost reasons including pollution, natural disasters, land degradation, and droughts. A steady rise in climate induced migration is taking place in the country. (Oil Brown, 2007). The main objective of this paper was to assess the status of migration in study area and the relationship between climate change and migration and tries to present a breakdown of the climate-migration nexus and an understanding of how climate change likely affects migration patterns within Pakistan. 4 main indicators were asked from the respondents as shown in figure 2. The results revealed that 94% of people have observed that communities are migrating from their area while 51% say that it is permanent migration and those migrated have not returned and the household members reported that this is due to no precipitation for long time, even those migrating temporarily are not coming back. 81% confirmed that the duration of less or no precipitation has significantly increased in last few years resulting water shortage in the area pushing people to leave their lands/ homes. 48% reported the no precipitation for a longer period and reported that the dry season has extended than before and it is increasing drastically resulting dried lands and reduced agriculture production and economic activity. Most of the respondents however responded with their own point of view and spoke in a personal capacity. It is also

important to know that due to limited understanding of the phenomenon, the individual perspectives, and perceptions of those affected by climate change vary considerably.

Government should consider having a separate National Climate induced Migration Policy for Pakistan because climate migration is often confused with economic migration and presented as something that needs to be slowed or reduced, without exploring the depths and causes of the widespread migrations.



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