Impact of Flood Migration on Education in Flood-Affected Areas of Sindh

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Heavy rain fell during the monsoon season from June to October 2022 and caused urban flooding in Sindh and Balochistan. The Government of Pakistan declared 85 districts as climate-hit. The 2022 flood caused the migration of many people from rural to urban areas of Sindh. Floods had a socio-economic impact on migrant families, causing damage to property, houses, agricultural land, infrastructure, livestock, health, and education. The present study aims to analyze the impact of flood migration on the education of migrant children and the city administration of immigration. For the current study, a survey method was used to collect data from 384 respondents. Data was collected from two districts of Sindh, Dadu (K.N. Shah) and District Naushahro Feroze. In the 2022 flood, highly affected areas were Dadu, Khairpur, and Naushahro Feroze; these districts faced a large number of migrations toward Hyderabad, Jamshoro, and Karachi (PDMA, 2023). A questionnaire was used as a data collection tool, and respondents were selected randomly from those villages from which people had migrated to cities. Data was analyzed in SPSS and presented in graphs. Recommended measures are suggested for policymakers.

Keywords: Migration, Education, Infrastructure, Flood 2022, Sindh

Introduction:

Millions of people migrate nationally and internationally due to climate disasters. Climate-induced migration affects people socially, culturally, economically, and psychologically. Pakistan experienced heavy rain and urban flooding during the monsoon season from June to October 2022 [1]. Sindh was among the most affected provinces of Pakistan. During the 2022 flood, migration was most frequent in Dadu, Khairpur, and Naushahro Feroze districts of Sindh Province.

The migrated population was accommodated in government schools, which intensified the impact of flood migration on educational institutions. Floods and heavy rain damaged school buildings, and the accommodated population in schools damaged the furniture of schools**, ** also causing a delay in the reopening of schools from 5 days to six months.

The most severely affected province by the recent flood was Sindh; the rain and flash floods flooded homes and businesses, destroyed personal property, and damaged essential infrastructure and everyday necessities like homes, roads, and bridges, killing or displacing hundreds of thousands of people and animals. Over 1.7 million people have been affected by the recent floods in Sindh, and 250,000 homes have been partially or totally destroyed, according to Pakistan's National Disaster Management Authority (NDMA) [2][3]. As a result, the natural disaster significantly impacted the affected people's daily lives, including their children's education within the province.

According to the Pakistan Education Sector Working Group-EiE **, ** "At least 26,652 schools have been damaged or destroyed across Pakistan, and 3.7 million school-aged children have been affected so far in the worst-hit provinces, with 76% in Sindh. Additionally, more than 7,162 intact schools have been turned into relief camps to house the people affected by the flood. Since then, the existing academic year has been disturbed by the recent flood and monsoon emergencies**, ** which are projected to cause damage to educational buildings and infrastructure." (SEF, 2023)

Objectives of the Study:

To analyze the impact of flood migration on the education of children in Sindh

To analyze the impact of flood migration on the educational institutions of Sindh,

To propose remedial measures to control damage to educational institutions and the education of children during flood migration.

Review of Literature:

A study conducted to analyze the educational loss during the 2022 flood found that the 2022 flood caused damage to the infrastructure of schools and the administration of schools. Children were also affected socio-economically and psychologically during the 2022 flood. The impact of floods was intensified due to a lack of planning, resources, and community resilience in the country [4].

A study was conducted on the impact of the 2022 flood on girls' education in District Nowshera, Khyber Pakhtunkhwa, Pakistan, which revealed that during the flood, school buildings, classrooms, washrooms, furniture, and other assets were damaged. Most of the girls left their studies due to economic losses during the 2022 flood. Girls also reported stress, depression, and other psychological impacts [5].

Climate change and its impact can be controlled with good governance and a climate awareness campaign by the youngsters in the country. The government needs to prioritize the educational problems of infrastructure and the development of an updated curriculum to equip young minds with climate education [6].

Girls and community members have considered damaged school buildings, financial constraints after the flood, loss of livelihood of dear ones during the flood, and damage to houses and assets as the main demotivating factors behind girls' education dropout [7].

The study concludes that the 2022 flood had a drastic impact on the education in Sindh. School buildings were damaged on a large scale. There was a major shift of the rural population to urban areas during the 2022 flood. The migrated population was accommodated in government schools, which caused great damage to the infrastructure of the schools. Buildings were roughly used by migrants**, ** and classrooms, washrooms, and furniture were damaged

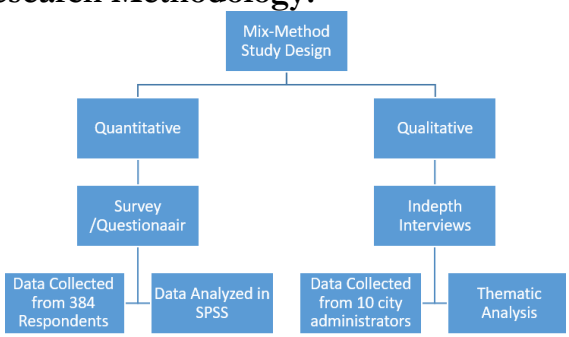
Monsoon rain started during the summer break, but even after the summer break, schools were not opened until September due to IDP camps in schools. The dropout rate increased, which also caused a one-year study loss.

Research Methodology:

This article is based on the research project of the Sindh Higher Education Commission, Sindh Research Support Program (SRSP) 2023-24 [8]. The title of the project is "Migratory Patterns in Flood-Affected Areas of Sindh."

This study used a mixed-methods approach. To analyze the impact of flood migration on the education of children, a survey was conducted, and 384 respondents were selected randomly from two districts of Sindh, District Naushahro Feroze and Taluka K.N. Shah of District Dadu. These two districts were selected because the migration rate was high in these districts of Sindh during the urban flooding of 2022. [9] To analyze the impact of flood migration on the educational institutions of Sindh, qualitative research was conducted by conducting in-depth interviews with city administrators. The sample size of qualitative data was 10**,** and five city administrators from each district were selected purposively to conduct in-depth interviews.

Flow Diagram of Research Methodology:



Results and findings of the study:

Table 1. Community of Migration of Respondents

Valid	Other	3%
	Rural	82%
	Town	13%
	Urban	2%

Sources: Primary data collected from District Naushahro Feroze and K.N. Shah, June 2024

The above Table No. 4 describes the affiliation of respondents who migrated during the 2022 flood, revealing that 82% of respondents belonged to rural areas, ** while 13% belonged to towns and only 2 percent of respondents belonged to urban areas of District Dadu (K.N. Shah) and District Naushahro Feroze [10].

Table 2. Accommodation of the Migrated Population after Flood-2022

Government school	34%
Government Tents	11%
NGO's/civil society helped	11%
Own home in the city	1%

Relatives home	34%
Rented home	9%

Sources: Primary data collected from District Naushahro Feroze and K.N. Shah, June 2024

The majority of flood-affected respondents, that is, 34%, were accommodated in government schools in urban areas/cities of the same districts. 11% of respondents lived in government tents, 11% were helped by NGOs by providing tents, 34% lived with relatives, and 9% in rented homes.

Table 3. Socio-economic Impact of Flood 2022

	Percent
Economic loss and damage	49%
The education of children was disturbed	47%
Living in the city and enjoying the glamour of city life	0.5%
Children are getting better schooling	1%
Children are learning a new culture	0.5%
Health and job opportunities are comparatively good in the new city	2%

Sources: Primary data collected from District Naushahro Feroze and K.N. Shah, June 2024

Flood migration had a great impact on the economy of respondents**, ** with 49% of respondents reporting economic loss**, ** and 47% of the view that the education of their children was affected. Only 1% of respondents said that they were getting better education after flood migration and had better education, health, and job opportunities in new cities.

Table 4. Educational Loss in Flood-2022

	Percent
Children left studies/school or dropped out	34%
Children lost one year of studies	56%
The school building in home hometown collapsed	1.0%
No damage to education due to the flood	9%
Total	100.0%

Sources: Primary data collected from District Naushahro Feroze and K.N. Shah, June 2024

Primary data reveals that most students lost one year of their studies due to flood migration, as confirmed by 56% of respondents. 34% of respondents reported a complete loss of studies and dropout from schools**, ** and only 9% said that there was no loss to the studies and education of their children.

Interpretation of the In-depth Interview of City Administrators:

Ten interviews were conducted with city administrators of two districts, namely, District Naushahro Feroze and Taluka K.N. Shah**, ** to analyze the impact of flood migration on educational institutions and the education system. Data reveals that in the schools of both districts where the migrated population was accommodated, there was great damage to buildings, classrooms, washrooms, furniture, and the overall infrastructure of schools. Damage was not only due to rainwater but also due to families who stayed in the schools. In the interviews, respondents revealed that schools were evacuated in mid-August to September 2022 to start classes and control study loss. In the end, all administrators suggested that the federal and provincial governments release funds on time. IDP camps must be established on government land as a large tent city. Next time, IDPs must not be accommodated in school buildings to avoid infrastructural loss to educational institutions. Educational facilities must also be provided in the tent cities.

Conclusion:

The study concludes that climate-induced migration had a great impact on education. The majority of IDP camps were established in government schools. Long-standing floodwater in the cities caused the closure of schools for a longer time. Also, the dropout rate

from schools increased, and most children had to face a one-year study loss due to flood migration. After the economic loss and damage to properties, it was education that was affected in the Province of Sindh due to the 2022 flood.

Discussion:

The 2022 super flood disrupted the education of around 3.5 million children in Pakistan; Sindh was the worst affected.

In Sindh, nearly 19,808 schools were damaged or converted into relief camps.

In 2024, heavy monsoon rains again disrupted schooling for 230,000 children**, ** and more than 1,300 schools remained non-functional due to standing water. Most families displaced to host villages or IDP camps often faced long distances to schools, a lack of transport, or challenges in transferring admissions. Schools used as relief shelters also led to the suspension of classes.

Based on the discussion, it is recommended that the government establish temporary learning centers near IDP camps and host villages to ensure children continue their education without long travel.

The findings of this study highlight the severe and multidimensional impact of the 2022 floods on education in Sindh. The results demonstrate that the displacement of families, coupled with the use of government schools as relief shelters, led to widespread disruption in the academic calendar, infrastructural damage, and a significant rise in dropout rates. Over half of the respondents confirmed that their children lost at least one academic year, while nearly one-third reported permanent school dropouts. These findings are consistent with [4], who noted that the lack of planning, community resilience, and emergency preparedness exacerbated educational disruptions during the 2022 floods.

The conversion of functional schools into IDP camps intensified the crisis, as both physical damage and the extended occupation of educational facilities delayed the reopening of schools. Similar observations were made in Khyber Pakhtunkhwa, where [5] found that girls' education was disproportionately affected due to damaged infrastructure, economic constraints, and cultural barriers, leading to increased dropout rates. The situation in Sindh mirrors this trend, showing that vulnerable groups, particularly children from rural areas and girls, were at higher risk of permanent educational loss.

Beyond infrastructure, the socio-economic losses suffered by migrant families played a critical role in shaping educational outcomes. Nearly half of the respondents reported severe economic damage, forcing households to prioritize survival over education. This aligns with [7], who emphasized that financial constraints and the loss of livelihood were among the main drivers of educational discontinuity for children in flood-affected communities. Thus, the floods did not only damage physical structures but also deepened socio-economic inequalities that hinder access to education.

The qualitative findings from city administrators further illustrate the dual burden on urban education systems: the immediate infrastructural damage to schools and the administrative challenge of managing IDP populations. Administrators stressed that the use of schools as shelters must be avoided in future disasters, recommending the establishment of tent cities or temporary shelters on safer grounds. This resonates with the arguments of [6], who emphasized the need for adaptive governance, climate education, and sustainable policy frameworks to mitigate educational disruptions during climate-induced disasters.

Another dimension evident in the findings is the psychological impact on children. Although this study primarily focused on infrastructural and socio-economic factors, other research (e.g., [5] has shown that stress, trauma, and the breakdown of routine contribute significantly to dropout and learning loss. This highlights the importance of integrating psychosocial support and community-based resilience measures into post-disaster educational interventions.

The broader implications of these findings suggest that Pakistan's education sector remains highly vulnerable to climate-induced shocks. Without systemic reforms, including robust disaster preparedness, alternative learning facilities, and financial support for affected families, each new flood event risks undoing years of progress in educational development. Establishing temporary learning centers near IDP camps, ensuring timely rehabilitation of school infrastructure, and mainstreaming climate resilience into education policy are urgent steps.

In summary, this study reinforces the conclusion that the 2022 floods not only destroyed physical assets but also disrupted the social fabric of education in Sindh. The displacement of families, economic insecurity, and institutional unpreparedness collectively contributed to a large-scale educational crisis. The evidence underscores the urgent need for multi-sectoral interventions that protect education from being sidelined during climate disasters, ensuring that children—especially those from rural and vulnerable communities—are not denied their fundamental right to learning.

Recommendations:

The government should provide a robust warning system,

A proper drainage system and proper maintenance of water canals will help to control urban flooding.

IDP camp/tent cities must be established on highlands, in an open area or on government land to accommodate a larger number of the migrated population.

The population of climate-hit areas must be facilitated in their cities to control climate-induced migration during floods.

Civil society, INGOs, and NGOs must collaborate with the government in the rehabilitation work.

The migrated population must not be accommodated in schools. Education and psychological counselling must also be provided in the tent cities to avoid any psychological damage to school-going children and their parents.

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