

## **Exploring the Implications of Flood upon the Rural Communities: A Study of Chiniot, Punjab**

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### **Abstract**

Flood is a type of natural disaster that leaves lasting implication upon the human lives. Most of time, the focus of such disaster has been on the primary or physical losses in terms of damage to infrastructure and entities. However, socio-economic and psychological implication of natural disaster has become equally important. The main objective of the research in hand was to examine these implication and underlying causes of the community's vulnerability in terms of emotions, livelihood patterns, agriculture, health, education, housing, water, sanitation, assets, disruption in normal life. Data of the present study were collected using quantitative approach through a pretested interview schedule from 240 respondents belonging to 12 most affected villages of district, Chiniot. The results revealed multiple socio-economic and psychological implication upon the communities. According to the social impact, most people felt badly affected as disruption in the education and social events, migration from the area erosion of social assets like neighborhood and kinship associations. In terms of the economic impact, it was large in terms of damage to property, crops, food stock, loss of livestock and other value able assets. Regarding the psychological implication, most of the respondents suffered from anxiety, depression, shock and experienced post traumatic disorder due to lasting effects of this natural tragedy. It is recommended that there must be upgrading of the infrastructure terms of building of new dams or re-capacitating of the existing dams, roads, link canals and the drainage system; that there must be a relocation plan, compulsory insurance, early warning systems, and that there must be good communication in the communities and institutions during floods.

### **Introduction**

Climate change and its related events are global concerns. Pakistan is vulnerable to disasters related to natural phenomena like glacier surges, earthquakes, cyclones, draughts, landslides, floods, tsunami and so forth (Khan, 2010). The rapid change in the climate is an enormous environmental, social and economic threat to Pakistan.

Rivers, exceeding their capacity, swept away millions acre of crop and thousands of villages as the “super-flood” rushed south, wreaking destruction throughout the country’s most populous province Punjab. Late monsoon rains in the North-Pakistani areas of Azad Kashmir and Gilgit-Balitstan, unleashing a violent flow of flood water into the heartland of Punjab’s agricultural areas. The Government of Punjab declared a state of emergency as the flood spread through central areas. The National Disaster Management Authority (NDMA) announced that 312 people have lost their lives, near about 2.3 million affected and 1.7 million acres (687,965 hectares) of crops lost (IRIN, 2014).

Natural disasters hinder the economic growth and damage the basic and core infrastructure, causing the disruption in livelihood patterns, routine services and health facilities. Floods are the leading cause of deaths from natural disaster throughout the world, with 6.8 million human deaths in the 20<sup>th</sup> century. Asia is the most flood-affected region, accounting for nearly 50% of flood-related fatalities in the last 25 years (Mooney, 2010).

The effects of flood can be categorized in two categories i.e. the primary effects (economic) and secondary (social and psychological). Loss of human life, damage to buildings and structures, including bridges, roads, and irrigation system include in the category of primary effects of flood. The primary effects of flood also include absence of clean drinking water and rehabilitation of water supply system, which may increases the chances of water contamination in the community and raises the risk of waterborne diseases, i.e typhoid, giardia, cholera and other diseases depending upon the location of the flood (Bratkovich and Burban, 1993).

There is need to analyze the secondary or in-tangible effects which have more long-term implication upon the respective communities, the financial imbalance due to homeless and of rebuilding, redemption of loans, loss of children’s education, access to food and water or food shortage, leading to price increases may be seen after the flooding. There are also psychological implications upon the affected, which may bring emotional damage to affectees i.e. post traumatic disorder, depression, fear of epidemics and insects and above of all the loss of the relatives due to extreme flooding (Harriet et al., 2013).

Most of time, the focus of such disaster has been on the primary or physical losses in terms of damage to infrastructure and entities. However, socio-economic and psychological implication of natural disaster has become equally important that needs equal consideration. This study intends to explore these dimensions to construct contingency framework in natural disasters like flood.

Floods had devastating effects on the agriculture sector in the form of disruption of livelihood patterns, destruction of irrigation channels, loss of livestock and standing crops, infrastructural damage and widespread epidemic diseases (Devereux, 2007).

Probing the effects of floods is a common need of the day because of their frequent occurrence and effects especially on agriculture sector: the major source of livelihood of the majority population in rural areas of Pakistan. Such an effort will not only help find the major causes of floods, their effects but also major solutions in the shape of contingency planning for meeting the future disasters. A study examining such effects on agricultural sector can further address the issue from its socioeconomic contribution on the livelihood of the population in rural areas. The objectives of the research are

- To find out the socio – economic characteristics of the respondents
- To assess the socio-economic and psychological implication upon the flood affectees

### **Material and method**

Methodology is an organization of a set of clear actions and laws on which the entire research is established (Nachmias & Nachmias, 1996). Chiniot was severely damaged by the flood, hence the universe

of the present study. 140 villages have been submerged in the district, Chiniot. On the both sides of the river Chenab, thousands of houses and crops damaged due to flood. Thousands of people were stranded in waist-deep water, along with their cattle. This study investigates the socio-economic and psychological implications of flood affectees in an integrative manner. Casual research design was used in the study. A well-structured interview schedule was prepared for the collection of primary data from the respondents to seek appropriate information at highest response rate. According to the WHO report, the most affected villages were Monian da pump, Shah-dat ka thatha, Kacha, Mingini, Road e ki, Tahli, Ahmed Wala, Bahga, Kalri, Kunan wali, Purana bagha, Sahaban wali. A sample of 20 respondents was taken from each village for face to face interview regarding the phenomenon under consideration via simple random sampling technique.

### Result and Discussion

Table 1 shows that most of the respondents were in the age category of 31 to 40 years, 35% of the respondents had education up to middle level and a portion of 21.7% of respondents was illiterate. A majority of the respondents i.e. 82.9% were living in joint family system as joint family had been popular form in the in rural areas due to many socio-economic advantages. Moreover, 57.1% of households had family size of 7 or above members and family income of the 44.6% respondents fell in the category of 10001 to 20000 rupees. These socio-economic and demographic characteristics indicate that most of the respondents live in joint family system, maintain large family size and low education due to their reliance upon the agricultural activities. One aspect is more obvious that this population have socioeconomic vulnerability. Socioeconomic vulnerability depends upon the education of the people, income, precautionary/alarming mechanism in the natural calamities and role of the government to meet with sudden situation.

**Table 1. Socio-economic characteristics of the respondents (n=240)**

Socio-economic characteristics	Frequency	Percentage
<b>Age</b>		
21-30 years	36	15.0
31-40 years	113	47.1
41-50 years	53	22.1
51 + years	38	15.8
<b>Educational level</b>		
Illiterate	52	21.7
Up to middle level	84	35.0
Matric level	63	26.3
intermediate level	26	10.8
Graduation or above	15	6.2
<b>Type of Family</b>		
Joint family	199	82.9
Nuclear family	41	17.1
<b>Household size</b>		
1 to 3 members	30	12.5
4 to 6 members	73	30.4

7 or above	137	57.1
<b>Household income</b>		
5000 to 10000	47	19.6
10001 to 20000	107	44.6
20001 to 30000	53	22.1
30001 or above	33	13.7

The economic effects of flood are often much greater than the flood itself (Parker et al., 2007). Significant economic implications had been observed by the respondent after the flood. Most of the respondents were associated with agricultural related activities. As table 2 shows that 65.4% of the respondents experienced house damage, 92% of the respondents suffered from crop damage, 82% of the respondents lost their food stocks while 72.1% of the respondents lost their livestock during the flood. Summing up the effects of flood upon the rural communities, that is, natural calamities have significant impact on the key macroeconomic variables and have the ability to slow down the economic growth and food supplies. Due to flood, this farming community social economic condition became miserable as in certain areas the outcome was nil and they were forced to take loans to meet their daily needs. It further compelled them to invest less in input use. Popp (2006) finds a long run relationship between natural disasters and macroeconomic key variables like saving, investments, fiscal and trade balances, human capital, physical capital and technology.

**Table 2. Economic Implications upon the respondents (n=240)**

<b>Economic implications</b>		
<b>House Damage</b>		
Yes	157	65.4
No	83	34.6
<b>Crop Damage</b>		
Yes	221	92.0
No	19	8.0
<b>Loss of Food Stock</b>		
Yes	197	82.0
No	43	18.0
<b>Loss of Livestock</b>		
Yes	173	72.1
No	67	27.9

Serious psychological implications are associated with natural disasters like depression, frustration, anxiety, posttraumatic stress disorder, grief, suicides etc. (Bonanno et. al., 2010). Psychological wellbeing is an important aspect in the process of recovery and resilience building in the communities. Survivors need time to maintain psychological equilibrium and to recover from these implications depending on the emotional support. According to table 3, 81.3% of the respondents feared of land grabbing, 94.6% of the respondent's encountered snakes or other deadly insects, 14.2% of the respondents experienced the death of relatives, 90.4% of the respondents felt anxiety/depression and 67.9% of the respondents post traumatic disorder.

**Table 3. Psychological implications upon the respondents (n=240)**

Psychological implications	Frequency	Percentage
<b>Fear of Land Grabbing</b>		
Yes	195	81.3
No	45	18.7
<b>Encounters with snake/insects</b>		
Yes	227	94.6
No	13	5.4
<b>Death of Relatives</b>		
Yes	34	14.2
No	206	85.8
<b>Feeling of anxiety or depression</b>		
Yes	217	90.4
No	23	9.6
<b>Post Traumatic Disorder</b>		
Yes	163	67.9
No	77	32.1

Social implications can bring serious problems for the long term functioning of specific types of households and livelihood strategies in the community affected by flood. (Lindsell and Prater, 2003). Table 4 depicts that children's education of the 88.3% respondents had been affected, 59.6% of the respondents wanted to migrate from the area, 94.6% of the respondents had supply issue of drinking water and 96.3% of the respondents experienced the disruption in the commencement of social event (marriage, festivals and other family events).

**Table 4. Social implications upon the respondents (n=240)**

Social implications	Frequency	Percentage
<b>Affecting children's education</b>		
Yes	212	88.3
No	28	11.7
<b>Migration Tendency</b>		
Yes	143	59.6
No	97	40.4
<b>Affecting drinking water</b>		
Yes	227	94.6
No	13	5.4
<b>Disruption in Social events</b>		
Yes	231	96.3
No	09	3.7

## Conclusion

This research reveals that flood has several socio-economic and psychological implications upon the individuals which range from micro to macro level. The present research identified that flood has caused serious damage to social and economic capital of the dwellers living in the flood prone areas of Chiniot. The main cause of vulnerability is due to sheer dependence upon agriculture which is highly

vulnerable to climate related disasters. It is concluded that victims had faced the loss of homes, crops, livestock, education, valuable possession and above all the loss of loved ones. Beside the socio-economic implication, there are also psychological implication that need to be addressed in policy making. The victims suffered from anxiety, phobias, depression, shocks, post traumatic disorder and other psychosomatic problems. There is need to develop a holistic policy that may efficiently address the composite effects of flood on the agricultural based communities.

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