

# **Awareness, Preparedness and Economic impact of Disaster: A Case Study of Kangra District**

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## **ABSTRACT**

Climate change as well as anthropogenic activities has intensified the severity of disasters around the world. India, a country with large population is vulnerable to various natural as well as man-made disasters. The hill state of Himachal Pradesh has witnessed the intense impact of rainfall in the year 2023. There is an unexpected destruction of both life and property due to which many families have gone homeless. This study explores the awareness, preparedness level and economic impact of disaster in Parmar Nagar village, district Kangra, Himachal Pradesh where houses sunk in and collapsed causing a misery to families during the year 2023. This study also focused on the significant role of social workers in disaster management as well as highlighted some of the major suggestive measures to mitigate the impact of disasters. The study was carried through primary data collection with the help of interview schedule and secondary data was also used. It is discernible that none of the respondents was aware of national emergency helpline number and disaster management plans. The present study highlighted that some of the respondents were forced to out-migrate due to disaster. It was endeavored to understand, analyze and interpret state of realism overtly impacting stakeholders. It was also observed that there is a dire need of active involvement of Governmental and Non-governmental organizations, community, and social workers to have adequate awareness, preparedness, mitigation of disaster so that precious natural and human resources are saved from being in vulnerable condition.

**Keywords:** Disaster, climate change, Impact, Social Workers

## **INTRODUCTION**

The Climate and Catastrophe Insight report of 2024 highlights that in 2023, the world experienced 398 natural disasters, with 95% of them being weather-related (Climate and Catastrophe Insight, 2024). This underscores the urgent need for disaster preparedness, resilience, and mitigation at international, national, and state levels. Disasters have become a major global concern, driven by global warming and human activities. Himachal Pradesh, a northern state in India, is known for its towering mountains, dense forests, rivers, and picturesque landscapes, making it a popular tourist destination. The state, home to people of various races, occupations, and religious groups, is highly vulnerable to natural disasters, such as floods, cloudbursts, landslides, and earthquakes, due to its unique climatic and topographical conditions. The district of Kangra, located in the scenic Dhauladhar range, is among the most populous in Himachal Pradesh, where agriculture is the primary livelihood for many. In 2023, the region was severely impacted by intense rainfall, recording its highest

rainfall since 1998, with 1,334.9 mm (Ovais, 2024). This extreme weather caused widespread devastation in Kangra, displacing many families. With over 70% of the rainfall occurring between July and September, the forecasted heavy monsoon of 2024 due to the La Niña effect raises further concerns for the state's vulnerable population (Nandi Jayashree, 2024). While the government has provided financial relief to disaster victims, the question remains: what about their emotional and psychological well-being? Efforts such as early warning systems, awareness campaigns, and mock drills have been introduced by the Himachal government. This study, conducted in Parmar Nagar village of Kangra, highlights the disastrous impact of the 2023 floods, which led to the destruction of homes, making it the village with the highest number of beneficiaries receiving monetary relief. To effectively mitigate such disasters, active community-based disaster risk management is necessary, with social workers playing a crucial role in mitigation, rehabilitation, and post-disaster recovery.

Several studies have examined the socio-economic and psychological impacts of disasters. A study by Devender Singh and Shailja (2024), titled *Impact of Joshi-Math Sinking on Local Women: A Case Study*, focused on women's experiences during disasters. Conducted in the Joshi Math block of Chamoli district, Uttarakhand, the study interviewed 25 local women, revealing significant economic and social challenges, including loss of income and social stigmatization. Many women were also at risk of psychological distress due to poor living conditions in animal shelters. The study recommends that women should play a central role in disaster risk assessments and that mental health services be integrated into disaster relief efforts (Singh & Shailja, 2024). Similarly, Negi, Yadav, and Ram (2022) conducted a study in three villages (Raini, Tapovan, and Payya Chormi) in the Joshi Math block of Uttarakhand, which were heavily impacted by floods. The study found that 24% of the respondents were entirely dependent on agriculture, which suffered due to land erosion, while 51% reported contaminated drinking water as a result of the floods. The study advocates for better planning in construction practices and community-based coping mechanisms to reduce disaster vulnerability (Negi, Yadav, & Ram, 2022).

Research by Chaturvedi and Dutt (2015) on landslide risk perception in Mandi town, Himachal Pradesh, found that prior experiences and awareness influenced residents' understanding of landslide risks. Most participants attributed landslide risks to human activities such as hill cutting and population growth. They emphasized the need for regular awareness campaigns and government action to mitigate such risks (Chaturvedi & Dutt, 2015). Vinod Kumar's (2009) study on disaster management in Mandi district revealed the region's susceptibility to cloudbursts and landslides, highlighting the role of local communities, NGOs, and government in disaster mitigation. However, gaps in disaster awareness and training at the local level were also identified (Kumar, 2009).

These studies demonstrate that disasters affect individuals in multiple ways, with economic hardship, loss of livelihoods, and psychological distress being prominent impacts. Financial assistance from the government is often insufficient, and there are significant gaps in awareness and training programs at the local level. The literature stresses the need for community involvement, as well as collaboration between the government and NGOs to effectively mitigate disaster impacts.

## RESEARCH METHODOLOGY

This study employs a comprehensive research methodology to investigate the awareness, preparedness and economic impact of disasters to ensure a robust and multifaceted understanding of the subject matter.

**Universe:** This study was conducted in the state of Himachal Pradesh. Himachal Pradesh having a large hilly terrain, comprises of 12 districts, out of which Kangra is the most populous District with overall hazard vulnerability status as high. The study is conducted in Parmar Nagar, (Sulah Block, Dhira Tehsil, Gram Panchayat chowki) a rural settlement which is located in Kangra District.

**Sampling size and technique:** Data was collected from 56 respondents from the village Parmar Nagar. Snowball and purposive sampling were used to collect data.

Both qualitative and quantitative methods were used for data collection. Data was collected from both Aggrieved/affected families and families prone to disaster. Primary data is collected with the help of an interview schedule(structured) and observation method was another tool used alongside. Secondary data was collected through census, meteorological data, Government authorities (NDMA and SDMA), research papers, newspapers and articles. To derive to conclusions from the data collected, descriptive statistical analysis was used in this study. Chi-square test was used for the purpose of the study taking gender as a parameter. The level of significance was verified at  $p < 0.05$  (5%).

**Objectives:** Main objectives of this study are as given below:

1. To understand the level of awareness and preparedness about disaster among individuals from different socio-economic backgrounds.
2. To assess the economic impact of disaster and to suggest measures in mitigation of disasters with specific reference to Social Workers.

## RESULTS

Data was collected from 56 respondents of village Parmar Nagar due to the following reasons:

- There were highest number of beneficiaries who got relief from the government (monetary terms) in Parmar Nagar i.e.16 which indicates that the highest number of families were affected in this area (data procured from DC office, tehsil Dhira).
- Although there are a total of 49 villages which were affected due to heavy rain in Dhira tehsil but Parmar Nagar was the only village which gained attention as in this area houses sunk in and collapsed which was unexpected and different than the rest of other areas.

The present study takes into account both males and females to make it gender inclusive. Information about socio-economic profile of the respondents as compressed in Table 1 shows that fifty-two percent of female respondents and forty-eight percent of male respondents were included in the study. Since disaster always affects all groups of people in one way or the another, so people of all age groups are included in the study (children, adults and elderly).

As from the above table it is evident that four percent children, eighty percent adults and sixteen percent elderly people were included in the study. The respondents had the basic educational qualifications.

**Table 1 Socio-economic profile of Parmar Nagar**

Variables	Values	Number of Respondents	Percentage
Gender	Male	27	48%
	Female	29	52%
Age	Up to 18	2	4%
	18-60	45	80%
	More than 60	9	16%
Educational qualification	Primary (up to 5 <sup>th</sup> )	11	20%
	Secondary (10 <sup>th</sup> )	21	37%
	Senior Secondary (12 <sup>th</sup> )	6	11%
	Graduation	9	16%
	Post-graduation and above	9	16%
Family type	Nuclear	19	34%
	Joint	37	66%
Family size	Small (up to 3 members)	9	16%
	Medium (up to 4-6 members)	34	61%
	Large (more than 6 members)	13	23%
Occupational status	Student	6	11%
	Farmer	5	9%
	Govt. employee	8	14%
	Private job	10	18%
	Home-maker	22	39%
	Others	5	9%
Marital status	Unmarried	9	16%
	Married	44	79%
	Widowed	3	5%
Residential status	Permanent	34	61%
	Migrated	4	7%
	Rented	12	21%
	Others	6	11%

Source: Primary data

Data reveals that there was a greater number of joint families which are sixty-six percent (almost double) in comparison to nuclear family's thirty-four percent. Also, there were a greater number of people having 4-6 members which is sixty-one percent, more than six members (twenty-three percent) and up to three members (sixteen percent). It is evident that most of the respondents were home-maker i.e. thirty-nine percent. People who are indulged in agricultural practices were nine percent and people who are retired(others) were also nine percent. People in private jobs were more i.e. eighteen percent in comparison to government sector i.e. fourteen percent. Also, eleven percent of the respondents were student.

It is discernible that out of all the respondents there were five percent of the respondents who were widows, sixteen percent of the respondents were unmarried and seventy-nine percent of

the respondents were in the married category. There were sixty-one percent of the respondents who have a permanent residence in the village currently, twenty-one percent had rented homes, seven percent of the respondents had migrated, either to the neighboring villages or to other cities like Chandigarh and eleven percent (others) of the respondents were either staying with their relatives or living in temporary shelters. The houses, landed property and cowsheds of the people who have migrated were destroyed and the government had not provided them with enough compensation to buy both a house and a land.

### Awareness and preparedness of Disaster

**Table 2 Details regarding Awareness and preparedness of Disaster**

Variables	Values	Number of respondents	%
Are you aware about the Disaster management Act,2005	Yes No	- 56	- 100%
Is there any specific role of Social Workers in Disaster management Act,2005	YesNo Don't know	- 1 55	- 2% 98%
Are you aware about the Himachal Pradesh State Disaster management plan,2017	YesNo	- 56	- 100%
Do you know any National helpline number in case of disaster	Yes No	- 56	- 100%
Have you received any kind of first-aid or emergency response training	YesNo	- 56	- 100%
What is the likelihood of disaster to hit your area again	Very likely Unlikely Don't know	54 -2	96% - 4%
Are you prepared to tackle such kind of disaster in near future	Yes No	- 56	- 100%
In case of disaster whom would you prefer to contact first for help	Social Workers Army NGOs NDRF/SDRF Others	35 - -6 33	62% - - 11% 59%
Do you think that Social Workers can play a crucial role in Disaster management	Yes No	54 2	96% 4%

Source: primary data

Awareness and preparedness about disaster(s) are necessary conditions to minimize adverse effects of disastrous conditions. However, on being inquired from respondents at the individual level and group level, it was observed that none of the subjects had any idea about disaster management Act,2005 and Himachal Pradesh State Disaster Management Plan 2017. Along with that none of the respondents were aware about any national helpline number in case of disaster. Ninety-eight of the respondents did not know about the role of social workers in disaster management Act,2005 and two percent of the respondents said that there is no role of social Workers in Disaster management Act,2005.

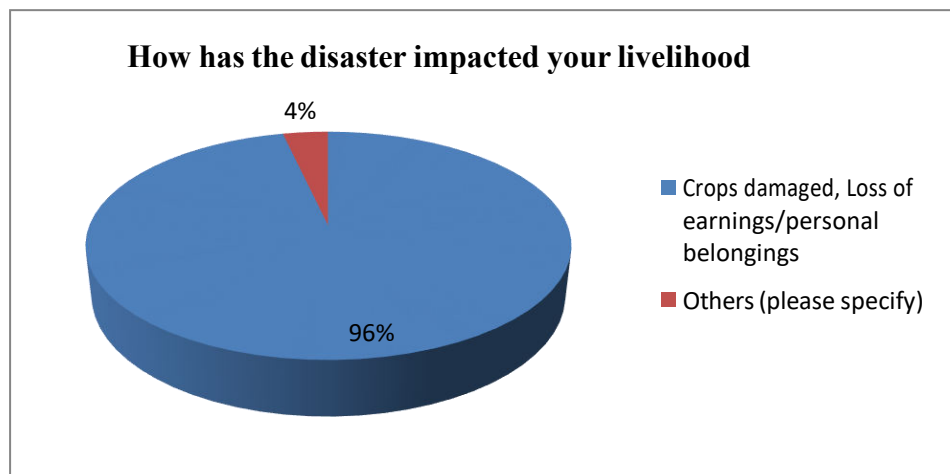
The data shoes that only four percent of the respondents did not know about the possibility of

disaster to hit again, rest ninety-six percent said that there is a very high chance of the disaster to hit their area again. In this, case using chi-square test (chi-square value is 0.003 and p value is 0.959) which indicates that there is no significant gender-based difference in the frequency of likelihood of disaster to hit the area again. None of the respondents have received any kind of emergency training before the eventuality, and till now they were not prepared to tackle such kind of disaster in the near future. The respondents stated that their major fear is loss of life and property.

Sixty-two percent of the respondents said that they prefer that social workers should be called upon for help. Fifty-nine percent of the respondents preferred that police (Others) should be called upon for help and eleven percent answered that National disaster response force/State disaster response force should be called upon for help. The people of Parmar Nagar were of the opinion that social workers work closely with the people and they understand the society in a better way so social workers must be involved in counselling services post disaster. They should also be involved in risk assessment and need assessment of the areas of Himachal Pradesh who are prone to such disasters. In this case the p value is 0.389 which means that irrespective of the gender individuals prefer to contact social workers more. Along with this, ninety-six percent of the respondents said that Social Workers can play a crucial role in disaster management whereas four percent of the respondents were of the opinion that there can be no role of Social Workers in disaster management. In this case the p value is 0.136 which indicates that irrespective of the gender individuals are of the opinion that Social Workers can play a role in disaster management.

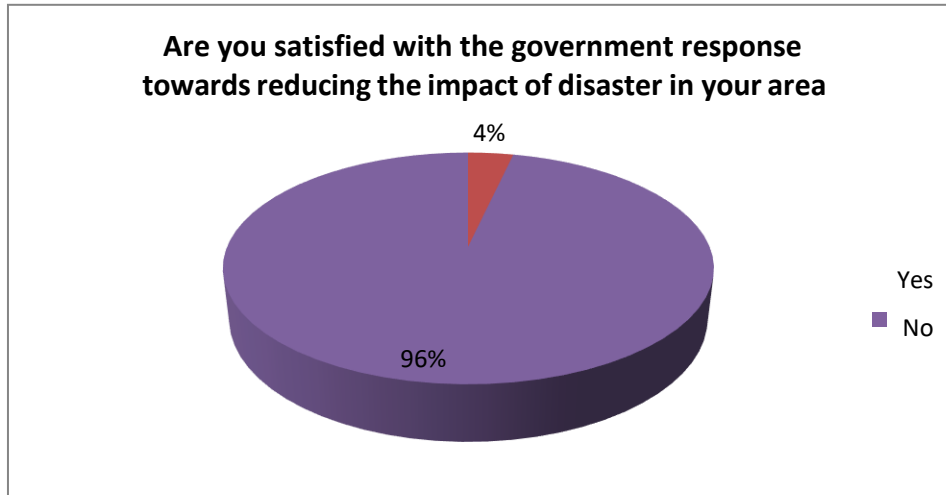
### **Economic impact of Disaster on the respondents**

Disaster leaves multitude of impacts on human life, cattle heads, residences and other immovable and movable properties.



**Fig 1 Impact of disaster on the livelihood of the respondents**

Fig 1 reveals that ninety-six of the respondents said that their crops were devastated totally and along with that since they did not get enough time to evacuate their belongings so, they lost their earnings and belongings during the disaster. None of the respondents mentioned about death of livestock or any human casualty. Four percent of the respondents (Others) mentioned that they lost their landed property which they have bought in that area. In this case using chi- square test (chi-square value is 2.228 and the p value is 0.136) which indicates that irrespective of the gender, disaster has impacted the livelihood of individuals.



**Fig 2 Are you satisfied with the disaster response of the government**

It is evident from Fig 2 that ninety-six percent of the respondents were not satisfied with the government response towards reducing the impact of disaster. Only four percent of the respondents were satisfied with the disaster response of the government. In this case using chi-square test (chi-square value is 2.228 and the p value is 0.136) which indicates that irrespective of the gender, individuals were not satisfied with the response of the government towards reducing the impact of disaster in their area.



**Fig 3 Debris of the sunken village Parmar Nagar**



**Fig 4 Collapsed houses and cowsheds**

## **Compensation from the government**

The families incurred a loss of around 5lakh-10lakh or more than 10lakh in financial terms. Government announced a compensation of Rs. 7.0 lakh per family. The families who were affected during the disaster have received 1<sup>st</sup> installment of Rs. 4.30 lakh and the rest amount is awaited. There were few families who did not claim for the compensation amount well in time, so they did not receive any compensation from the government but their land, cowsheds and fields were devastated during the disaster.

The families were not satisfied with the compensation amount from the government. They mentioned that how they will buy a land as well as construct homes simultaneously with so minimal compensation amount in comparison to the loss incurred to them in financial terms? Also, there were few families who have experienced the effects of this eventuality (living on the road-head side) and they mentioned that they were scared that next time their house will also be devastated in the disaster, but the government was not concerned about this and has not taken any effective steps in reducing the impact of disaster.

## **Suggestions and role of Social Workers in mitigation of disasters**

### ***A. Suggestions***

- 1) Firstly, there should be improvement in the early warning system to make individuals aware prior to any eventuality.
- 2) There should be a streamline process to provide compensation to the victims so that they can make a return to their normal life. It is often seen that the victims have to deal with lots of situation to get compensation.
- 3) Government should cooperate with private players to provide insurance policies to the people residing in disaster prone area like Himachal Pradesh.
- 4) In recent floods of Bihar, people lost their documents, because of which it became very difficult for them to get compensation. Authorities should store data in digital form so that in case of any emergency, immediate steps can be taken.
- 5) Installing contour homes, which are designed in such a way that they minimize the damage during floods or landslides and thus enhance resilience towards disasters.

### ***B. Role of Social Sorkers***

#### **i. Pre-disaster situation**

- 1) A Social worker can provide his/her knowledge while developing a policy because social workers understand the society in a better way and work in diverse settings. The impact of disaster varies from place to place and we can't go with the **“One size fit to all”**. Therefore, Social workers can assess the needs and resources of the community and utilize them in the best possible way to overcome the impact of disasters.
- 2) A Social worker can sensitize the individuals about the emergency numbers whenever any disaster occurs.



## **ii. Post-disaster situation**

- 1) A Social worker can help the authorities while making assessment of the damage and also gather information for any future needs to deal with the disasters.
- 2) A Social worker can link the affected families with support systems like NGOs and legal systems in order to claim for the compensation after the disaster within the time framework.

## **FINDINGS AND DISCUSSION**

The study reveals the awareness, preparedness level and economic impact on people after the disaster in the village Parmar Nagar, where the houses collapsed and sunk in after the continuous spells of rainfall. The study highlights that the joint families are almost double (sixty-six percent) in comparison to nuclear families (thirty-four percent), which clearly indicates that because of the interdependency in joint families, the dependents are more who require more resources during the disaster. Also, in joint families there are elderly, children and women who require additional care during the disaster. It is evident from the study that thirty-nine percent of the respondents are home-makers so their dependency increases on the head of the family to sustain their livelihood, which causes an emotional stress on the head of the family to sustain their families during disaster.

The study also highlights the problem of migration after the disaster which is quite typical. Twenty one percent of the total respondents have rented homes in neighboring villages and seven percent of the respondents have migrated to other cities like Chandigarh. Also, there are a greater number of people engaged in private sector (eighteen percent) in comparison to government sector (fourteen percent). Due to this, the individuals were more focused on getting themselves the basic necessities like shelter, food and safe drinking water facilities because of the need of the hour. So, for a couple of months till the life was again back to normalcy, the individuals did not go to their jobs in order to sustain their families and faced job insecurity, salary cuts which further added to their problems.

None of the respondents were aware about the Disaster Management Act, 2005 and Himachal Pradesh state disaster management plan, 2017 and National Emergency helpline number in case of disaster, which clearly indicates that there is an ineffective public awareness by the disaster management authorities and the government to inform the public about these emergency numbers residing in disaster prone state like Himachal Pradesh, the same is highlighted in the study conducted by (Kumar, 2009) who found that there were some loopholes in the awareness and training programs at the local level. This study shows that ninety-six respondents think that there is a very high possibility of disaster to hit their area again during monsoon which draws attention of the government of Himachal Pradesh and disaster response forces to take immediate steps before it becomes too late.

The study reveals that more than half of the respondents (sixty-two percent) would prefer to contact social workers for help first, (fifty-nine percent) would prefer police and (eleven percent) would prefer disaster response forces which suggests a strong trust and belief in the ability of social workers in comparison to the government or the disaster response forces.

Respondents might believe that due to the local knowledge they can be more effective in providing relief.

The present study found that ninety-six percent of the respondents mentioned that the major impact on their livelihood was because their crops were destroyed and their earnings/personal belongings were lost during the disaster. It is evident from the study that nine percent of total respondents were engaged in agricultural practices depending on the agriculture to sustain their livelihood which relates to the findings of the study conducted by (Negi et al., 2022) where twenty-four percent of the people were completely dependent on agriculture and were adversely affected because of floods since their land became infertile due to erosion, sedimentation etc. The data further shows that nine percent of the respondents were retired individuals who were dependent on their earnings/personal belongings. The Another major finding of the study was ninety-six percent of the respondents were not satisfied with the government response towards reducing the impact of disaster which relates to the study conducted by (Singh &., 2024) where the families were also not satisfied with the compensation amount given to them.

### **Limitations**

The qualitative analysis is based on the small sample size, which may limit the generalizability of results. Also, because of the hilly terrain, the houses were sparsely located, due to which some of the houses were not easily accessible.

### **CONCLUSION**

The study reveals the major loopholes in disaster awareness, preparedness and economic resilience amongst the individuals of Parmar Nagar following the continuous spells of rainfall in the year 2023 that led to the collapse and sinking of houses. Key findings highlight a lack of awareness about Disaster Management Acts and plans, alongside a significant unawareness of national emergency helpline number in case of disaster. This embarks an urgent need for more effective public awareness campaigns and workshops by disaster management authorities. The study also focuses on the increased vulnerability of joint families, who constitute a majority in the village, due to their greater interdependency and the presence of members who require special care. A significant issue revealed by the study is of migration, which reflects the forced measures taken by affected families to secure safe homes and basic necessities, further stressing the need for improved local disaster management and support systems. The economic impact has been severe, with many respondents losing their crops and personal belongings, leading to considerable financial losses. The dissatisfaction with government compensation further aggravates the financial strain on the families of the village Parmar Nagar.

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