

Disaster Preparedness of Rural Youth in Household and Community Level

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Abstract

A disaster refers to a catastrophe, mishap, calamity or grave occurrence from natural or man-made causes, which is beyond the coping capacity of the affected community. Unfortunately, our communities are not well prepared to deal with such disasters when they come as a result of inadequate knowledge, low level of preparedness or inability to mitigate and respond to the disaster in due time. The Disaster Management Act, 2005 envisaged that Comprehensive disaster management and emergency preparedness should be based on the concept of active young people's participation in all phases of the disaster cycle. There is no better resource in a community than young people and disaster management must recognize the value of including them in the planning process. With this backdrop, the present study was undertaken in Jalpaiguri district of West Bengal to assess the benchmark situation of rural youth regarding their preparedness towards disaster management.

From the study it is seen that disaster preparedness of the community youth is very low and it is influenced by the awareness level on disaster management as well as by the socio economic and personal characters like cosmopolitaness, asset possession, family education status, information seeking behavior, housing and sanitation index, training and organizational participation and awareness regarding disaster management. The study also revealed that in the fields of preparedness towards disaster management, female youths are ahead of male youths. Govt. should intervene on increasing knowledge of disaster management and should also stress on women participation in disaster assessment, preparedness and prevention in the community level.

Keyword: Disaster management; Youth; Women; Youth role; Disaster preparedness.

1. Introduction

Statistically speaking, 65% of India's population is below the age of 35, of which around 41% is between the age group of 13-35 years. A country with such a young force has huge possibilities of growth--something which the world acknowledges now. It is the gushing brigade of the young that can overpower any challenge, stand as a dam to tackle any might and become a bridge to bind hearts, cultures, lives and livelihoods. Young people are a major human resource for development, key agents for social change and driving force for economic development and technological innovation. But harnessing these resources is a major

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challenge. The youth challenge is considered as the most critical of the 21st century's economic development challenge.

A disaster refers to a catastrophe, mishap, calamity or grave occurrence from natural or man-made causes, which is beyond the coping capacity of the affected community. We live in communities that are increasingly becoming vulnerable to natural as well as manmade disasters that cause substantial loss of life and economic damage. Unfortunately, our communities are not well prepared to deal with such disasters when they come as a result of inadequate knowledge or an ability to mitigate and respond to the disaster in due time. As a result, many people lose their lives and properties or find themselves trapped in disaster high spots which they cannot escape without external intervention. Frequently when a disaster strikes, it forces vulnerable communities to temporarily or permanently evacuate the comfort of their homes, neighbourhoods, workplace and institutions or confine themselves to their home, leaving them without basic services such as water, gas, electricity, telephones or emergency help (Gaillard, 2007).

Disasters accounts for 98 percent of the cumulative number of people affected by natural disasters and 77 percent of total reported economic damage (WMO, 2007). In the least developing countries (LDC) in particular, climate-related disasters accounted for 89 percent of the total economic damages (WMO, 2007). Most people in developing countries have limited capacity to assess climate risks and lack available weather information required to plan adaptive responses. These people are more likely to be severely affected by climate-related diseases, such as influenza, diarrhea, cholera, meningitis, dengue, and malaria. Weak infrastructure, poor communication networks, shortage in electricity supply, low public awareness, and insufficient resources in many communities and neighborhoods hinders the provision of timely climate and early warning advice, which can delays response efforts causing an impact to become of significant amount (Akeyo, 2010).

India is vulnerable, in varying degrees, to a large number of natural as well as man-made disasters. 58.6 per cent of the landmass is prone to earthquakes of moderate to very high intensity; over 40 million hectares (12 per cent of land) is prone to floods and river erosion; of the 7,516 km long coastline, close to 5,700 km is prone to cyclones and tsunamis; 68 per cent of the cultivable area is vulnerable to drought and hilly areas are at risk from landslides and avalanches. Vulnerability to disasters/emergencies of Chemical, Biological, Radiological and Nuclear (CBRN) origin also exists. Heightened vulnerabilities to disaster risks can be related to expanding population, urbanisation and industrialisation, development within high-risk zones, environmental degradation and climate change (NDMA, 2009).

Disaster management covers a broad range of interventions, measures, activities, projects and programs to reduce disaster risks, which are primarily designed by people in at-risk localities and are based on their urgent needs and capacities. Disaster management aims to 1) reduce vulnerabilities and increase capacities of vulnerable groups and communities to cope with, prevent or minimize loss and damage to life, property, and the environment, 2) minimize human suffering, and 3) hasten recovery (Victoria, 2002).

On 23 December 2005, the Government of India (GoI) took a defining step by enacting the Disaster Management Act, 2005, which envisaged the creation of the National Disaster Management Authority (NDMA), headed by the Prime Minister, State Disaster Management Authorities (SDMAs) headed by the Chief Ministers, and District Disaster Management Authorities (DDMAs) headed by the District Collector or District Magistrate or Deputy Commissioner as the case may be, to spearhead and adopt a holistic and integrated approach to

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DM. There will be a paradigm shift, from the erstwhile relief-centric response where the Ministry of Agriculture - the nodal agency – providing food, compensation and relief to the survivors and victims; to a proactive prevention, mitigation and preparedness-driven approach for conserving developmental gains and to minimise loss of life, livelihood and property (DM Act, 2005).

The act envisaged that Comprehensive disaster management and emergency preparedness should be based on the concept of active young people's participation in all phases of the disaster cycle. Rather than seeing disaster-affected youth as victims or passive recipients of outside assistance, good disaster management must recognize the value of including them in the planning process. There is no better resource in a community than young people. It may be easier to obtain funding for projects and related disaster preparedness programs, but without sufficient community resources in place, disaster preparedness and risk reduction are not possible (NDMA, 2009).

With this backdrop, the present study was undertaken to assess the benchmark situation of rural youth regarding their awareness and preparedness towards disaster management with the following specific objectives:

1. To assess community level disaster risks experienced by the members of the community.
2. To assess the awareness level and preparedness of rural youth of the study area towards disaster management. And
3. To identify the socio-economic and personal level determinants of disaster preparedness of the rural youth in the study area.

2. Materials and Methods

2.1 Study area and respondents

The study was conducted in Jalpaiguri district of West Bengal, India. Two adjacent villages in Sadar Block of the district purposively selected considering their exposure and vulnerability to disaster. After selecting the villages a list of all the families and the number of population under the age group of 18-35 years were listed. Based on these list 100 numbers of youths (irrespective of male and female) were selected on a stratified random sampling basis from both the villages.

Awareness: Levels of awareness was assessed by the response of some selected questions on different types of disaster. If the response is true, the score is '1'; if false, it is '0'.

Preparedness: Levels of preparedness was assessed by the actual actions undertaken by the rural youths to minimize the risk of disaster. The scale was 'Adequately prepared', 'Inadequately prepared' and 'No preparation' with '2', '1' and '0' scores respectively.

Disaster risk: It is measured by the hazard value of a calamity. Hazard value is assessed by the potentiality of a calamity to manifest itself as a disaster, and it is measured by the previous 10 years records of occurrence frequency, geographical distribution and damage severity. A combine score was assigned to every calamity based on a community level matrix ranking. Each criterion was measured on a 10 point scale according to severity. **Development of Indices.** For the sake of analysis and comparison the following indices were developed based on the previous variables and scales.

$$\text{Awareness Index} = \frac{\text{Total score obtained from awareness questions}}{\text{Maximum score obtainable from awareness questions}}$$

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$$\text{Preparedness Index} = \frac{\text{Total preparedness score obtained from different fields}}{\text{Maximum preparedness score obtainable from different fields}} = \frac{\text{Average Frequency score} \times \text{Average distribution score} \times \text{Average severity score}}{10 \times 10 \times 10}$$

Hazard value

3. Result and Discussion

3.1 Assessment of community level disaster risk as experienced by the respondents

The study communities (Vivekananda Palli and Balapara in the sadar block of Jalpaiguri district) were in the bank of river Teesta and very much prone to flood. Moreover, other types of disasters had also potentialities to be hazardous in the community. Hazard value of these natural calamities were assessed by the perception of the respondent villagers employing the participatory matrix ranking methodology. Several groups from the communities performed matrix ranking and the average value were taken (Table-1). A 10-point scale each for their occurrence frequency (number of times occurred in last 10 years), geographical distribution (area affected in last 10 years) and damage severity (extent of damage occurred in last 10 years) were used and score was given as per the perception of the respondents. From table-1, it is found that flood is the most hazardous natural calamity (value = 0.714 out of 1.000) followed by earthquake (0.416), cyclone (0.338), Disease epidemics (0.251) and drought (0.138). Fire was assessed as negligible to manifest it as a potential hazard.

3.2 Awareness and preparedness of rural youth towards disaster management

Table-2 presented the distribution of respondents according to the level of awareness on different types of disasters and their management. Awareness regarding flood, earthquake, drought, cyclone, fire and disease epidemics was considered. Respondents were placed as **highly aware** (awareness index is more than 0.67), **moderately aware** (awareness index is between more than 0.34 to 0.67), **low aware** (awareness index is upto 0.34) and **no awareness** who had attained no score on disaster management on that field. The table showed that the flood is the mostly known disaster (57.81 percent male and 77.78 percent of female are highly aware about this) followed by earthquake, drought, cyclone and fire. The least aware disaster is the disease epidemics which are highly known by only 7.81 percent of respondents. 54.69 percent, 51.56 percent, 48.44 percent and 39.04 percent of the respondents were highly aware regarding these disasters respectively. There was none who did not know anything about flood, but there were 23.44 percent male and 11.11 percent female respondents who did not know anything on earthquake; or 12.50, 6.25 and 12.50 percent of male respondents who did not know anything on cyclone, fire and disease epidemics respectively. Table-3 represents the distribution of respondents according to the participation towards disaster management activities. When preparedness and prevention activities are taken or the relief and rescue operation is performed in more than 50 per cent cases (according to the extent of performance), it is regarded as the adequate performance in the present study. Based on that scale, only fire prevention activities gained a noticeable value. For other types of disasters the study area facing a grim situation in preparation field fields. Although they are highly aware about the cause, effect and mitigation of such types of disaster, yet they did not or could not take any noticeable activities for prevention and preparedness. In respect of awareness regarding disaster and its management male and female youths both had a moderate level of

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awareness (Awareness Index Value: Female=0.595 and Male=0.568) and both males and females are at par in the levels of awareness of the disasters. In the field of preparedness and prevention tasks, females are significantly ahead of the males [Preparedness Index Value: Female=0.250 and Male=0.200 (t-value=2.43 which is significant at 1% level)]. This may due to the fact that female counterparts of the family are more responsible for the security of the family from disaster, and male counter parts are more engaged in earnings outside home. Although in both the fields of participation in disaster management, their contribution is low to medium in status.

3.3 Socio-economic and personal determinants of disaster awareness and preparedness

From table-4 it is found that the awareness regarding disaster management is significantly correlated with the age of the respondent, Cosmo politeness, asset possession, family education status, information seeking behavior, housing and sanitation index, training and organizational participation and performance towards disaster management. Only number of family members has no relation with awareness. Among these variables, age had negative relationship with awareness. It is due to the fact that in the study area, most of the young aged people are the members of student community. The students are more interested in acquiring and seeking awareness information from different sources and various fields than any other age groups. The performance is also positively and significantly correlated with cosmopoliteness, asset possession, family education status, information seeking behavior, housing and sanitation index, training and organizational participation and awareness regarding disaster management. Cosmo politeness makes an individual more exposed to the outer world which, as a result increases the general as well as specific awareness level. More the asset possession of a family, they have more access to education and other amenities of the society. This indirectly influences the acquisition of knowledge and awareness towards disaster.

Relationship with family education status, information seeking behavior and training and organizational participation may be explained from the same reasoning. Housing and sanitation index is the reflection of the economic condition of the family and so it also can be explained from the same reasoning with asset possession. Relationship between awareness and participation is also positive and significant. Preparedness in the present study is the participation in prevention and mitigation activities in the household level. It is evident that who have awareness regarding the cause, effect and methods of disaster management will have more participation in prevention, preparedness and mitigation activities.

Table 1: Community level disaster risk.

Calamities	Frequency	Distribution	Severity	Hazard Value
Flood	9.22	9.18	8.44	0.714
Earthquake	6.52	9.43	6.76	0.416
Drought	6.00	5.15	4.45	0.138
Cyclone	7.74	7.73	5.65	0.338
Fire	1.59	2.07	2.10	0.007
Disease epidemics	8.07	3.28	9.51	0.251

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Table 2: Distribution of respondents according to awareness regarding disaster management

Name of Disasters	High Index value is > 0.67				Medium Index value is > 0.34 to 0.67				Low Index value is upto 0.34				No Index value = 0.00			
	Male	Percent	Female	Percent	Male	Percent	Female	Percent	Male	Percent	Female	Percent	Male	Percent	Female	Percent
Flood	37	57.81	28	77.78	11	17.19	5	13.89	16	25.00	3	8.33	0	0.00	0	0.00
Earthquake	35	54.69	16	44.44	7	10.94	13	36.11	7	10.94	9	25.00	15	23.44	4	11.11
Drought	33	51.56	19	52.78	23	35.94	5	13.89	8	12.50	7	19.44	0	0.00	5	13.89
Cyclone	31	48.44	20	55.56	13	20.31	5	13.89	12	18.75	11	30.56	8	12.50	0	0.00
Fire	25	39.06	17	47.22	27	42.19	11	30.56	8	12.50	0	0.00	4	6.25	8	22.22
Epidemics	5	7.81	11	30.56	27	42.19	9	25.00	24	37.50	7	19.44	8	12.50	9	25.00
Mean awareness score Awareness Index Value: Female=0.595; Male=0.568 (t-value=0.48NS) NS=Not Significant																

Table 3: Distribution of respondents according to preparedness level in disaster management

Calamities	Female						Male					
	Adequate	Percent	Inadequate	Percent	No	Percent	Adequate	Percent	Inadequate	Percent	No	Percent
Flood	3	8.33	29	80.56	4	11.11	7	10.94	49	76.56	8	12.50
Drought	8	22.22	9	25.00	19	52.78	8	12.50	13	20.31	44	68.75
Disease Epidemic	7	19.44	8	22.22	21	58.33	4	6.25	7	10.94	53	82.81
Fire	15	41.67	10	27.78	11	30.56	20	31.25	21	32.81	23	35.94
Earthquake	0	0.00	2	5.56	34	94.44	0	0.00	1	1.56	63	98.44
Cyclone	0	0.00	5	13.89	31	86.11	0	0.00	7	10.94	57	89.06
Mean preparedness score Preparedness Index Value: Female=0.250; Male=0.200 (t-value=2.43**)												
**Significant at 1% level												

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Table 4: Correlation between socio-economic and personal characteristics with awareness and participation towards disaster management.

Personal and family characteristic variables	Awareness regarding DM	Preparedness towards DM
Age of the respondent	-0.307**	-0.050
Number of family members	0.140	0.232*
Cosmo-politeness	0.239*	0.208*
Asset Possession	0.191*	0.330**
Family education status	0.489**	0.233*
Information seeking	0.239*	0.281**
Housing and Sanitation Index	0.335**	0.316**
Training and organisational Participation	0.306**	0.206*
Awareness regarding DM	1.000	0.420**
Preparedness towards DM	0.420**	1.000

DM=Disaster management ** Significant at 1% level *Significant at 5% level

4. Conclusion

The present study was an attempt to reveal the bench mark situation of the rural youth towards awareness and preparedness of disaster management and light on the socio economic and personal factors which influence such preparedness. From the study it is seen that disaster preparedness of the community youth is very low and it is influenced by the awareness level on disaster management as well as by the socio economic and personal characters like cosmopoliteness, asset possession, family education status, information seeking behavior, housing and sanitation index, training and organizational participation and awareness regarding disaster management. The study also reveals that in both the fields of awareness and preparedness towards disaster management, female youths are ahead of male youths. Govt. should intervene on increasing these socio economic and personal variables to prepare rural youth to cope with disaster risk of the community, and they should also stress on women participation in disaster assessment, preparedness and prevention in the community level.

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