

The role of gram panchayats in disaster management: A study in Aila affected areas in West Bengal

Debabrata Mondal¹, Sarthak Chowdhury² and Debabrata Basu³

1. Res. Scholars, 2. Prof., Department of Agril. Extension, Institute of Agriculture, Visva Bharati, Sriniketan, WB,

3. Professor, Department of Agricultural Extension, B.C.K.V, Nadia, West Bengal

Corresponding author e-mail: mondal.debabrata@gmail.com

ABSTRACT

This study was conducted in Aila affected areas of North and South 24 pargana district of West Bengal. The results of the empirical study indicated that the main role of Gram panchayat in Disaster management according to the performance are Arrangement of disaster shelters, Arranging awareness camp, forecasting early warning system, repair of river embankment, protection of vulnerable groups of the people and providing relief materials. Apart from the implementation of developmental programs, the Panchayat system also has a role with regard to disaster management. The data were collected in the month of October 2013 to March, 2014. Total 150 gram panchayat members were selected purposively as the respondents. The data obtained were analyzed by frequency, percentage and paired comparison. The comparative study found that hierarchy of role of gram panchayats in disaster management were repair of river embankment, arrangement of disaster shelters, forecasting early warning system, arranging awareness camp, protection of vulnerable groups of the people and providing relief materials.

Key words: Role of Gram Panchayats; Disaster Management; Aila; Early warning; Relief;

Aila appeared in the Bay of Bengal without a word. “Hiss of Aila at 120 kmph” was the headline of the Telegraph daily in Kolkata (PUS, 2009). Aila the cyclone originated in the Bay of Bengal and culminated in Darjeeling. It ran through the spine of West Bengal causing havoc on the way through the Sunderbans, Kolkata, Bardhaman, Farrka, Malda, Raigunj and Darjeeling. During the late night of 24th May 2009 a deep depression was formed which got its maximum strength and formed a severe cyclonic storm Aila located approximately 130 nautical miles south of Kolkata (Calcutta), and Bay of Bengal accompanied with torrential rains causing a great extend of disaster in whole Bengal worst hit to South 24 Parganas and to some area of North 24 Parganas. Due to the heavy tide, the level of river water raised 10 m. above the normal. Thus, rainwater along with seawater entered into the villages and destroyed most of the mud houses and the livelihood, paddy fields, communication system and etc. (Mukhopadhyay, 2009). Heavy rains triggered by the storm also raised the river levels and burst mud embankments in the Sundarban delta in the neighboring eastern Indian state of West Bengal. According to the

Government data more than 11, 00,000 people who fled (their) homes had been sheltered in several hundred shelters in eight coastal districts so far. The Government survey estimated that the total Aila affected areas were: Blocks 111, Municipality 39, Villages 15401, and Population 4,53,8018.00 (GOI, 2009). Keeping this in views the study was undertaken with the objective to analyz the relative importance of the role of gram panchyats in disaster management.

METHODOLOGY

The districts North and South 24 parganas of West Bengal were selected purposively for the study because these two districts were the most severely affected by Aila. Six blocks namely Basanti, Gosaba, Namkhana, Kakdwip, Sandeshkhali, Partharpratima, and five gram panchayats from each block were selected purposively making a total of 30 gram panchayats.

From the selected all gram panchayats, 150 members (5 members from each gram panchayats) were selected as respondents. The statistical tools viz., frequency percentage analysis, mean and method of paired comparisons were used to analyze the data.

RESULTS AND DISCUSSIONS

The Panchayati Raj Institution (PRI) members can play a role of leadership in Disaster Management at all stages, right from the preparatory stage up to the handling of the long term development activities for risk reduction.

Role of PRI according to GOI-UNDP, 2009

Pre-disaster

- Organising awareness campaign and promoting community education on disaster preparedness
- Articulation of community need for developing preparedness plan through community involvement and Panchayat ownership
- Identifying the resource gaps both physical and manpower and replenish the same through capacity building
- Establishing synergy with local agencies including NGOs/ CBOs
- Activating the disaster management Plans with the participation of the community
- Encouraging people to insure assets and livestock
- Formation of Task forces and their capacity building
- Establishing convergence with local institutional structures created for implementing education, health, livelihood, social justice and so on.

During disaster

- Arranging emergency communication through available resources
- Evacuation to temporary shelter and running relief camps
- Supplementing rescue and relief efforts in coordinating different agencies
- Monitoring of relief distribution
- Safe disposal of carcass and arranging safe drinking water and sanitation

Post- disaster

- Damage assessment particularly assisting in identifying victims for compensation and its distribution
- Formulating rehabilitation and reconstruction plan of houses and other local infrastructures
- Enforce minimum specification for safe reconstruction
- Supervise and monitor long term reconstruction and mitigation projects

Apart from these activities, six types of specific activities were performed by the gram panchayats in disaster management. These are

- Arrangement of disaster shelters
- Arranging awareness camp
- Forecasting early warning system
- Repair of river embankment
- Protection of vulnerable groups of the people and
- Providing relief materials.

To establish the hierarchy of role of gram panchayats the method of paired comparison (*Edwards, 1969*) was followed. The six types of activities were presented to the gram panchayats members in pairs, in 15 possible combinations $[6(6-1)/2=15]$. The F-matrix or the frequency with which each column stimulus was judged more favorable than the row stimulus was obtained from 150 gram panchayat members (Table 1).

Table 1. F-matrix for the selected six types of activities.

Activities	A	(B)	(C)	(D)	(E)	(F)
(A)	-	73*	65	120	49	52
(B)	77	-	78	106	84	68
(C)	85	72	-	88	61	79
(D)	30	44	62	-	57	15
(E)	101	66	89	93	-	72
(F)	98	82	71	135	78	-

* To be understood as 73 members preferred arranging awareness camp to arrangement of disaster shelters and so on.

Table 2. P-matrix corresponding to the F-matrix.

Activities	(A)	(B)	(C)	(D)	(E)	(F)
(A)	0.500	0.487	0.433	0.800	0.327	0.347
(B)	0.513	0.500	0.520	0.707	0.560	0.453
(C)	0.567	0.480	0.500	0.587	0.407	0.527
(D)	0.200	0.293	0.413	0.500	0.380	0.100
(E)	0.673	0.440	0.593	0.620	0.500	0.480
(F)	0.653	0.547	0.473	0.900	0.520	0.500
SUM	3.106	2.747	2.932	4.114	2.694	2.407

The cell entries of F-matrix were divided by N (the total number of respondents; 150) to get the P-matrix (Table 2). The cell entries of P-matrix gave the proportion of times that the column stimulus was judged more favourable than the row stimulus. The cell entries in the diagonal line which were blank in the F-matrix were assumed to be $N/2$ i.e. 75 in each case. This gave a proportional of 0.500 which has been shown in each cell of the diagonal line of the P-matrix.

The P-matrix was then rearranged with the stimulus having the smallest column sum at the left and that with the highest at the right. For this purpose, the column stimuli in the table head were rearranged from the smallest to the highest as F, E, B, C, A and D. This gave the rearranged p-matrix, which is presented in Table 3.

Table 3. Rearranged P-matrix smallest to highest column sum

Activities	(F)	(E)	(B)	(C)	(A)	(D)
(F)	0.500	0.520	0.547	0.473	0.653	0.900
(E)	0.480	0.500	0.440	0.593	0.673	0.620
(B)	0.453	0.560	0.500	0.520	0.513	0.707
(C)	0.527	0.407	0.480	0.500	0.567	0.587
(A)	0.347	0.327	0.487	0.433	0.500	0.800
(D)	0.100	0.380	0.293	0.413	0.200	0.500
SUM	2.407	2.64	2.747	2.932	3.106	4.114

The Z-matrix corresponding to the rearranged P-matrix was obtained by converting the P_{ij} entries to Z_{ij} entries with the help of table given by *Edwards (1669)* and this is presented in Table 4.

Table 4. Z-matrix – Hierarchy of activities performed by the gram panchayats members

Activities	(F)	(E)	(B)	(C)	(A)	(D)
(F)	0.000	0.050	0.118	-0.068	0.393	1.282
(E)	-0.050	0.000	-0.051	0.235	0.448	0.305
(B)	-0.118	0.151	0.000	0.050	0.033	0.545
(C)	0.068	-0.235	-0.050	0.000	0.169	0.220
(A)	-0.393	-0.448	-0.033	-0.169	0.000	0.842
(D)	-1.282	-0.305	-0.545	-0.220	-0.842	0.000
SUM Z	-1.775	-0.787	-0.661	-0.172	0.201	3.194
Mean Z	-0.295	-0.131	-0.110	-0.028	0.034	0.532
Add largest -ve deviation	+0.295	+0.295	+0.295	+0.295	+0.295	+0.295
Rank R (Scale value)	0.000	0.164	0.185	0.267	0.329	0.827

The column sum for each stimulus was obtained by adding the respective cell entries, taking the sign into consideration. The mean values were obtained by dividing the sums with the total number of stimuli (6 in the study). The absolute scale value of the stimulus with the largest negative deviation (0.295) was added to all the column means to make the scale value for this stimulus zero and all of the others with positive sign. The hierarchy of role of gram panchayats in disaster management and the scale values are presented in Table 4.

The present findings were based on the response of 150 gram panchayats members spread over six blocks namely basanti, gosaba, namkhana, Kakdwip, PatharPratima and Sandeshkhali in West Bengal. From the Table 4, it was found that out of six types of activities identified, repair of river band/ embankment had the highest scale value and was considered as the most important role of the gram panchayats in disaster management.

Table 5. Relative importance of the role of the gram panchayats in disaster management according to their scale values

Role of the gram panchayats	Scale values	Rank
Repair of river embankment	0.827	I
Arrangement of disaster shelters	0.329	II
Forecasting early warning system	0.267	III
Arranging awareness camp	0.185	IV
Protection of vulnerable groups of the people	0.164	V
Providing relief- materials	0.000	VI

Table 5 stated that repair of river embankment is one of the most important role of the gram panchayats in the study areas. Panchayats repair the river bank to protect the villagers from flood through different programmes such as 13 State Finance Commission or Backward Region Grant Fund. The efficacy of embankments as flood control measures have already proved inadequate in many parts of this subcontinent. The embankments in Sundarban caused increasing sedimentation on the river bed which gradually went high above the floodplain. The water level goes further above the crest of the embankment during cyclonic upsurges. The impinging waves scour the base and cause breaches in the embankment. The waves achieved a height of three metres during the Aila and overtopped the barrier. Arrangement of disaster shelter is the next important role of gram panchayat. About 90 per cent of the population live in kacha houses. So during Aila the houses were damaged and villagers took shelter in *Pacca* buildings such as school building, panchayat office, and some people also stay on the road. After getting information from Block office about the disaster they warned the villagers through mike. The members also informed the villagers through awareness camp. They also suggested the villagers to leave their kacha building immediately with their important documents or

materials and take shelters in the nearby pacca building. Protection of vulnerable groups of the people is important role as perceived by the panchayat members in disaster management. The members shifted the old aged person, pregnant women, children and diseased to safer places. During and after Aila the panchayat members distributed relief materials such as rice, dal, chira, gur, tarpaulin, cloths, utensils, medicine, water bottles etc. Still the panchayats distributed rice 16 kg/ month/ household @Rs. 2/kg.

CONCLUSION

The Panchayati Raj Institution (PRI) is a statutory body elected by the local people through a well defined democratic process with specific responsibilities and duties. The elected members are accountable to the people of the ward, rural community, block and the district. Keeping the above in view, the study identified the role of gram panchayats in disaster management. Six types of activities were carried out during Aila. The Paired Comparison of the study reflected the hierarchy level of role of gram panchayats in disaster management as repair of river embankment, arrangement of disaster shelters, forecasting early warning system, arranging awareness camp, protection of vulnerable groups of the people and providing relief materials. Hence, there is a need to define the role of PRIs in Disaster Management and sensitise local communities through them to develop coping mechanism in preparedness and mitigation

measures of disaster to minimize its destructive effect on life and property at local level.

The PRI members can play a role of leadership in Disaster Management at all stages. Right from the preparatory stage up to the handling of the long term development activities for risk reduction, PRI can lead in several ways. The study identifies drinking water scarcity as the major problem of the affected area. Therefore, a sufficient number of tube-well should be erected through a soft loan scheme or non refundable donation. Since the entire livelihood option in the affected area was destroyed by Aila and the affected people became workless, employment generating activities such as food for work, small scale entrepreneurship should be run with equitable and fair representation of all affected people. Moreover, alternative livelihood opportunities should be created by using locally available natural resources. Damaged embankments and communication system should be repaired, and if necessary reconstructed, on priority basis to protect the affected area from further flooding and tidal surges. Since most of the people have become homeless and are still living in temporary make shift tents in embankments and other areas, NGOs and different financial institutions can provide local people with long term low interest or no interest loan to reconstruct their houses.

Paper received on : June 01, 2014

Accepted on : July 23, 2014

REFERENCES

- Edwards, A.L. (1969). *Techniques of attitude scale construction*. Vakils, Feffer and Simons Private Ltd., Bombay.
- GoI (2009): National Disaster Management Guidelines/Management of Floods. National Disaster Management Authority. P.XIX
- GoI-UNDP (2009) Disaster risk management programme 2002-2009.
- Kumar, et.al(2010):report on 'Cyclone Aila: One Year on; Natural Disaster to Human Sufferings'.
- Mukhopadhyay, A. (2009): Cyclone Aila and the Sundarbans: An Enquiry into the Disaster and Politics of Aid and Relief.
- PalliUnnayanSamitiBaruipur (2009): "Aila" Cyclone Report.

• • • • •