The Role of Social Networks in Disaster Information and Management

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Abstract- Globally there is an increase in the social and economic impacts of different kinds of disasters. But the vulnerability to disasters can be reduced if any individuals or family has links through diverse social networks. As disaster vulnerability is socially constructed. In this paper I will attempt to analyze how social networks help in providing disaster related information to its potential victims and even help in managing disasters in an effective manner.

Index Terms- Social Networks, Disasters Management, warning

I. Introduction

Natural hazards be it earthquake, floods, cyclones, landslides, drought, tsunami etc, have now become a world-wide phenomenon. Although the increasing frequency and intensity of disasters is felt globally but the developed and developing countries suffer more from the magnitude and impact of natural disasters. Nearly 90 per cent of natural disasters and 95 per cent of disaster related deaths world wide occur in developing countries. It is estimated that by the year 2025, 80 per cent of the world's population will live in developing countries, and up to 60 per cent of them will be highly vulnerable to different kinds of disasters[1].

The continent of Asia, because of its geographical location is particularly vulnerable to different types of disasters. And within Asia it is India which suffers heavily from natural disasters of every shade and description, on account of its size, population and vulnerability. India supports one-sixth of the world's population on just 2% of its landmass. According to one estimate[2], nearly 59% of India's land area is prone to earthquakes of moderate to high hazard, nearly 12% is flood prone, about 8% is cyclone prone, 2% is landslide prone and a long coastline is exposed to tsunamis and storm surges. Drought is regarded as disaster in slow motion, affect as much as 68% of India's land area. Out of the 35 states and union territories, as many as 27 are disaster prone. If we include the perceived threats due to other disasters such as chemical and terrorist attacks, then every square inch of India is vulnerable, calling for immediate attention and sustained effort.

Although the occurrence of different kinds of disasters cannot be prevented altogether, but their impact can be reduced substantially by undertaking various preparedness and mitigation programmes. As nowadays there are a lot of investments in the field of disaster management and the government of India has taken several steps to reduce the impact of natural disasters. Disaster management occupies an important place in the country's policy framework. Today there is a paradigm shift in understanding disasters from simply analyzing the causal relations and explanation of events and occurrences to preparedness, planning and the risk assessment of a potential threat. In spite of these, there is an increase in the social and economic impacts of different kinds of disasters. Why we have not been able to reduce the long-term disaster risks? One of the reasons for this is the negligence of a crucial aspect, which is not much researched in disaster studies, i.e. the role social networks play in disaster management, which I will attempt to, analyze in this paper.

II. Social Networks and Disaster Management

Natural disasters occur in all countries of the world. The coping capacity to natural calamities of developed countries is better than developing countries. People cope with increasing hazards if they have the alternative support of social networks in times of crisis. The vulnerability to disasters can be reduced if any individual or family has links through diverse social networks. As disaster vulnerability is socially constructed, i.e. it arises out of the social and economic circumstances of everyday living. So what are social networks? Social networks are part of a basic motivational imperative for 'safety' (Kadushin, 2002). It is actually the need for physical and emotional safety which enhances individuals' motives and feelings of dependency, trust and support, and provides the fundamental basis for social cohesion, which is an important characteristic in social networks. This is even true in case of disaster based social networks. There are different types of social networks, i.e., family, relatives, neighbours, or the network link through community - based services, etc.

In the immediate aftermath of a disaster, the government, civil society organizations and people are unprepared to meet the challenges of the disaster in terms of relief and rehabilitation. In a post-disaster situation it is difficult to reach the affected people and carry out the initial relief operations, if the disaster is big in

[1] This paper is a revised version of what I had presented in the 2nd India Disaster Management Congress, Vigyan Bhavan, New Delhi, 4th -6th November, 2009,

[2] For more details see the article, Bhandari, R.K. (2006), "Disaster Management in India: A New Awakening", *Disaster and Development,* Vol.1, No.1, pp.1-26.

scale, as it was the case of the 1999 super cyclone in Orissa. In case of the 1999 super cyclone in Orissa due to the impassable roads with floods, water-logging and obstruction by broken trees, the relief activities were delayed, although aid started pouring in from charitable institutions, corporate houses, international, national and local non-government organizations.

During the super cyclone in Orissa many people came from far-flung areas to meet their family members in the affected areas, although it took them more time to reach the destination than the usual time, but still they continued their long and arduous search. It is because disasters are basically "family crisis", emotional bonds, expressive and instrumental functions of networks, as well as family contacts are crucial for response and recovery (Morrow, 1997). The family unit, in a disaster acts like "an octopus extending its tentacles outward to connect with other social units" (Morrow, 1997 Fothergill, 2004).

In fact in the 1999 Orissa super cyclone, it was the relatives (a type of social network) who were the first to reach the affected people of the Orissa and provided them help in terms of cash and kind. Even many affected people of the super cyclone shifted their family to a relation's house which was not affected by the disaster, as they were prepared to help. It is this forged type of interdependence that helped to mitigate the stress and uncertainty associated with the disaster. In a crisis situation like the 1999 Orissa super cyclone it was their social networks who embraced their own, stood up and were counted in both presence and presents.

During disasters in Orissa although there are cases of caste based prejudices and discrimination, but during the 1999 super cyclone the relatively affluent general caste people with a pucca structure who were neighbours (a type of social network) to the Harijan people provided them shelter during the super cyclone. It is actually the pre-existing norms, practices and relationships which helped the affected people to cope with the disaster. Social networks were found to be a significant resource during and in the immediate post-impact phase of the disaster.

In 26th December 2004, there was a massive earthquake in the Indian Ocean which triggered off tsunami waves resulting in a colossal loss of lives and affecting millions of people in 11 countries. It even left a trail of destruction in India. Although in India it was the fishing sector which was severely affected, but within this sector it was women, children, dalits and tribal people (the most vulnerable groups), who were the worst impactees of the disaster, but were the most neglected in official responses (Walls, 2005; Choo, 2005; KrishnaKumar, 2005). These vulnerable groups have a differential timeframe in their recovery.

The response to the tsunami in terms providing relief and rehabilitation was overwhelming, but due to the focus on the worst affected community i.e. the fisher communities, many dalit and tribal communities who were seriously affected by the tsunami, were overlooked or actively discriminated in the official response. It was the strength of the network of local NGO response which helped these vulnerable groups to cope with the disaster. It was the network of 12 local NGOs[3] i.e. the East Coast Development Forum (ECDF) and within it two NGO networks that focused on the dalits and tribals, i.e. the Irulas' Tribal Women's Welfare Society (ITTWS) and the Social Awareness Society for Youth (SASY), joined the East Coast Fishers Forum (ECFF) which helped in forming the ECDF (SASY, 2005a, 2005b). It is ITTWS and SASY who understood the needs and priorities of the dalits and tribals, and The People's Rural Education Movement (PREM) an NGO from Orissa which formed the common link within the diverse membership of the ECDF.

The NGO of Orissa i.e. PREM played an important role in forming networks as it had gained practical disaster management skills from its work in the 1999 super cyclone of Orissa (Das, 2005). It is through its activities in the 1999 Orissa super cyclone that PREM had developed effective approaches to relief and accountability systems, which were applied to the tsunami relief operations with minimal adjustment. It was the support given by the NGO PREM which along with the strength of the local NGO networks, helped to develop strong links with the local fisher communities, and a long record of trust and credibility, which enabled these NGOs to manage successfully the delivery of emergency relief and rehabilitation programmes, taking into account the needs of vulnerable groups, i.e. the dalits and tribals. This shows how network linkages through community – based services can help people to mitigate disaster vulnerability and can enhance people's coping strategies. Thus social networks are reservoirs for the development of a disaster affected community.

III. Social Networks and Disaster Warning

The ever increasing complexity of disasters requires that we undertake various preparedness and mitigation strategies to reduce the adverse societal and economic impact. One of the preparedness measures is to provide accurate disaster warning to the disaster affected area. Social networks can play a very significant role in disseminating the warning message which would eventually help in managing disasters. For example – during the 1999 Orissa super cyclone the Indian Meteorological Department (IMD), the government agency provided warning about the impending cyclone from the radio, television and even from the loudspeaker by the government authorities. But the people of Orissa did not take the warning issued by the government seriously and even did not evacuate as was suggested in the warning and there are a number of reasons for it. It is because the affected people did not find any difference from this warning with the earlier warnings of the past which was given twelve days before the cyclone and had affected only two districts of Orissa i.e. Ganjam and Gajapati. Even the warning information lacked credibility and specificity. So many people were in doubt and they stayed at home and the others who wanted to leave had no options as there were no adequate cyclone shelters. As a result of which the 29th October, 1999 super cyclone of Orissa claimed 9800 lives.

But on the other hand the warning information from the informal sources in the Orissa super cyclone such as the news from relatives, neighbours, and from the market places played a major role as people believed in it because of the trust on these networks.

[3] For more details see the article, Kilby, P. (2008), "The Strength of Networks: The Local NGO Response to the Tsunami in India", Vol.32, No.1, pp.120-130.

Even during the 2005 Hurricane Katrina in United States although the government warning was issued, but people did not give importance to it because of which many lives were lost. But when this information was passed from the informal sources of some trusted African American women-centered networks in New Orleans it carried more authority. It is because of the networks of these women that they were able to evacuate a number of individuals from the disaster. This shows how women played a major role in moving their networks to safety during the crisis situation.

But the process of transmitting information is highly structured and hierarchical. For example – the warning systems transmit the information from men to men and the technically preferred medium used to disseminate warning is the radio although the men might support this, but women with their household duties and responsibilities do not have a fixed time to listen to the radio so they might remain unaware of the warning.

Even the people who receive warnings of risk go through different stages that shape their risk perceptions and behaviour. The different stages include: hear, confirm, understand, believe, personalize, and respond. Although the sequence might not be the same for every person, and every stage can be affected by the characteristics of the people who hear the warnings such as age, gender, level of education etc., even by the nature of the information they hear, for instance, how frequently it is repeated, and who it is from. Here it is important that the disaster related information is given to the person (who can act as an anchor or gatekeeper) who because of their position or ability can decide what information is relevant and worthy to pass along to other members of their network (Kirschenbaum, 2003).

IV. Conclusion

When one contrasts the basis of social organization in post-industrial societies, as opposed to pre-industrial societies, one finds that kin relationships have reduced greatly in importance (Parsons, 1942; 1943; Stephens, 1963). Disasters it appeared are like funerals, weddings, were people reestablish what were assumed to be highly tenuous relations. Even in highly individuated communities relations become highly important to families in disaster (Hill and Hansen, 1962:210).

Disasters occur in specific geographic locations and usually affect populations in proximity to its epicenter. The response to a disaster is not confined to its geographical proximity and this helps the affected people to cope with the consequences of the disaster. It is social networks which provide the social strength to the disaster affected people to cope with the disruptive effects of the disaster, even if they are physically dispersed it provides them social capital to cope with the losses of the disaster. The role of social networks in disaster management shows that they touch people even if they are not directly or physically involved in the actual disaster.

Moreover since the warning system in India mainly focuses on detection, monitoring and forecasting, but has ignored the other crucial aspects of the warning system i.e. the vulnerability analysis or measuring the threat level to different sub-groups within a population and warn accordingly. So here the importance of social networks comes as they not only transfer disaster related information to vulnerable groups but also help them to evacuate by using the resources already embedded in their daily lives. Social networks not only delineate the boundaries of a disaster but also act as a means for transferring disaster related information. It is important to include the role of social networks at the policy level as this would empower people to make them less vulnerable in the face of natural hazards and this would act as a disaster preparedness measure which would eventually help to manage disasters in an effective way.

But still there are many aspects about the role of social networks in disaster management which is not much researched i.e. how gender, caste, ethnic groups through their social networks can play to an important role in disaster management? And what would be the long-term impact of the social networks in mitigating / preventing disaster risks? These are some of the questions which I am posing as there is scarce research on these issues but understanding and analyzing these aspects can surely help us to solve some of the problems of disaster management.

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