

Vulnerability and the Coping Capacity of Women in Natural Disasters- An Indian Experience

Rajeev M. M.*

Abstract

Disasters affect men and women, the young and the old, the rich and the poor in different ways. Women are more vulnerable in disastrous situations and they need to be taken care of. Initiatives should be taken for this vulnerable group to reduce the vulnerability so that they can cope with disasters more effectively and efficiently. Women more than men are at risk of morbidity and mortality because of their gender role in terms of social, cultural and biological aspects (Meleis, 2005). Women's vulnerability to disasters is also shaped by traditional gender roles, power and privilege, low wages, and secondary responsibilities such as child care (Elaine Enarson and Betty H. Morrow). This study tries to understand the vulnerability and coping capacity of women during natural disasters, and various measures to be taken for reducing the coping capacity of women. The main objectives of the study are (1) to study how vulnerable women are to natural disasters. (2) to make aware of coping capacity of women in natural disasters. (3) to understand the major measures taken for reducing the vulnerability of women. The researcher used descriptive research design for the study. The researcher used questionnaires for conducting the study. The universe of the study is the flood affected women in Thalavadi Grama Panchayat in Kerala. The researcher used convenient sampling method for data collection. And statistical methods were used to analyze the collected data. The study pointed out that the governmental system, local self-government, non-governmental organizations; voluntary organizations have a pivotal role in addressing the problems of vulnerable groups. The most important findings described in this study are the limitations of local self-government in dealing with the assistance of financial aid to the people. The paper concludes that women must be less vulnerable to disasters through empowerment initiatives before, during and after disasters.

Keywords: Coping Capacity, Vulnerable Groups, Convenient Sampling, Empowerment

Introduction

In 2016, millions of vulnerable people globally may be affected by the effects of natural disasters, including drought, floods and food insecurity (FAO, 2016). Disasters are categorized into two ways natural and man-made disasters. A disaster management cycle typically includes disaster mitigation and prevention, rehabilitation and reconstruction. It is widely known and accepted that disasters affect women and men differently. The United Nations Handbook for estimating the socio-economic and environmental effects of 2003 emphasizes that one consequence of disaster is the DE capitalization of women and the reduction of their share of productive activities in the formal and informal sectors. "Not only do they sustain in direct damages or production losses housing and means of production but they also lose income when they have to apply themselves temporarily to unpaid emergency tasks and an increased amount of unpaid reproductive work is usually granted a lower status than paid work. It is also a continuous job which limits women's mobility and can sometimes even prevent them from their rights as citizens".

We live in a society where women and children are the most vulnerable group. During disaster, this vulnerability increases. Though disasters do not discriminate, the socially constructed role of women makes them the vulnerable group during disaster. Because women have less access to resources, they are victims of the gendered division of labor, they are primarily responsible for domestic duties and they do not have the liberty of migrating to look for work following a disaster (*World Bank 2005*). The differentiated impact of disasters on men and women is primarily caused by the existing gender

* Assistant Professor Department of Social Work, School of Social Sciences, Central University of Rajasthan, Rajasthan, India. Email: rajeevnambiarmm@gmail.com

inequalities manifested. A study conducted by London School of Economics shows, taken a sample of up to 141 countries over the period 1981 to 2002, natural disasters and their subsequent impact,

Vulnerability is not simply about poverty, but extensive research over the past 30 years has revealed that it is generally the poor who tend to suffer worst from disasters (Twigg, 2004; Wisner et al., 2004; UNISDR, 2009b). Poverty is both a driver and consequence of disaster risk (particularly in countries with weak risk governance) because economic pressures force people to live in unsafe locations (*see exposure*) and conditions (Wisner et al., 2004). Poverty and the other multi-dimensional factors that create vulnerability mean that susceptibility to the impacts of hazards is often, but not always, associated with certain groups, including women, children, the elderly, the disabled, migrants and displaced populations, amongst others. Vulnerability is the condition determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards (UN 2009). Vulnerability is 'insecurity, the reverse of security'; it reflects "the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard." It involves a combination of factors that determine the degree to which someone's life and livelihood is put at risk by a discrete and identifiable event in nature or in society (Blaikie et al 1996:8). Vulnerability refers to exposure to contingencies and stress and difficulty in coping with them. It has two components: i) an 'external' side of risks, shocks and stress to which a structure, individual, household, community or nation is subject; and ii) an 'internal' side of lack of resources to cope without damaging loss (Hossain et al 1994). A human condition or process results from physical, social, economic and environmental factors which determine the livelihood and scale of damage from the impact of a given hazard. In disaster management, coping means the trends and techniques where people gain their expected results by using their property. It is very much related with capacity. Strategies can be defined as a set of activities or mechanism by which people try to survive in disasters, recover their situation and develop their conditions after disaster.

Most of the studies examine flood or any other disaster which induced vulnerabilities among women. Poor and disadvantaged women are more vulnerable to disasters than men due to the conditions that predispose them to

severe disaster impacts. Women suffer from physical injuries and are often evicted from their dwellings due to floods. Difficulties in finding adequate shelter, food, safe water, and fuel for cooking, as well as problems in maintaining personal hygiene and sanitation, prevent women from performing their usual roles at home. All of these are problems related to women's gender identity and social roles. Many poor and destitute women remain unemployed during and after floods. Women also suffer from domestic violence and are subject to harassment when taking shelter or refuge at community centers. These particular vulnerabilities and problems interrupt women's mitigation efforts and adaptation capacities in disaster risk reduction.

Women are not universally or automatically more vulnerable to the effects of all disasters in every society. But the gendered division of labor often puts women at increased risk, for example during 2004 Indian ocean tsunami when male fishers were able to ride out the waves at sea, the women were waiting on shore with nets for the catch were swept out to sea. Women jeopardized their own safety to save children and other dependent persons and in some cases biological factors such as advanced stage of pregnancy or frailties' of advanced age came into play. Case studies indicate that the gender inequalities more than gender differences explain the impacts of disasters on girls and women (Elaine Enars, 2006). This study will be more helpful to understand the vulnerability and coping capacity of women during natural disasters, and helps to understand the various measures to be taken for reducing the coping capacity of women.

Background and Scope of the Study

Natural disasters do not affect people equally. Inequalities in exposure and sensitivity to risk as well as inequalities in accessing resources, capabilities and opportunities disadvantage certain groups of people, making them more vulnerable to the impact of natural disasters.

Social norms and role behaviors provide some explanation for the difference in mortality between men and women. However, the socially constructed gender-specific vulnerability of females, which is built into everyday socioeconomic patterns, is the chief reason for the higher female disaster mortality rates:

1. Since female life expectancy is generally higher than that of males, for most countries natural disas-

ters narrow the gender gap in life expectancy.

2. The stronger the disaster (as approximated by the number of people killed relative to population size), the stronger this effect on the gender gap in life expectancy.
3. The adverse impact of disasters on females relative to men vanishes with rising socioeconomic status of women.

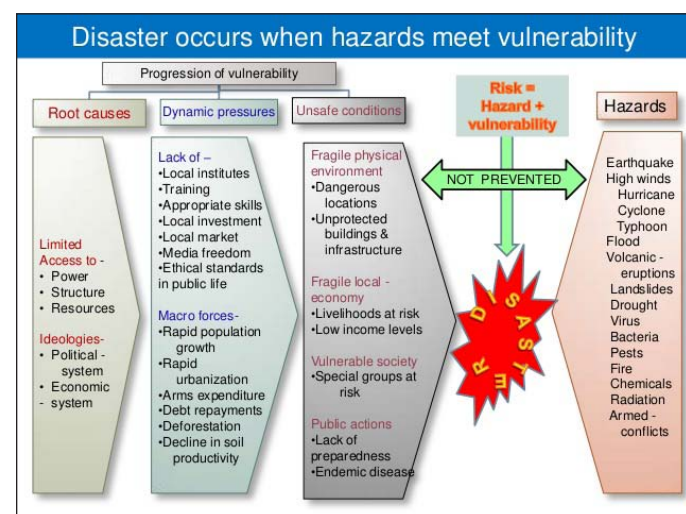
Review of Literature

“Role of women in disaster management: An analytical study with reference to Indian society” a paper by Vasudha Gokhale, discusses about the vulnerability of women during natural disasters.

Women are especially hard-hit by the social impacts of environmental disasters. Existing inequalities are the root cause of women’s disaster vulnerability. Women are particularly vulnerable because they have fewer resources in their own right and under their own control. They have no permanent place in decision - making systems. And they suffer traditional, routine and gratuitous gender-biased oppression. By virtue of their lower economic, social, and political status, women tend to be more vulnerable to disasters. By virtue of their lower economic, social, and political status, women tend to be more vulnerable to disasters. Women’s high rate of poverty as well as cultural constraints on their activities in some societies means they are more likely to suffer losses of life and property in the face of natural disasters. Their role in ensuring household food security, and their dependence on natural resources to do this, reinforces the impact of disasters, for example drought and slow flooding, in search of supplemental income; this leaves women to fend for themselves and assume even greater responsibility for caring for their family. In post disaster situations women are often more vulnerable than men. Their care giving roles expand dramatically after a disaster and experience shows their access to resources for recovery is constrained. Reports from many disaster affected parts of India reveal that even when women have had access to cyclone (or community) shelters, they have had to work harder than usual, and in defiance of their own safety imperatives, to gather fuel wood for cooking. Their special health needs, in fact especially those of pregnant and lactating women, are ignored.

Highly vulnerable women have specific needs and interests before, during, and after disasters. Gender shapes capacity as well as vulnerability. Women are active and resourceful disaster responders but most often are regarded as helpless victims. Vulnerability can be categorized as material, social, ecological, organizational, and educational etc. Most of the causes which lead to vulnerability are lack of access to resources, disintegration of social patterns, lack of access to information and knowledge, lack of public awareness etc.

Vulnerability can be defined as the diminished capacity of an individual or group to anticipate, cope with, resist and recover from the impact of a natural or man-made hazard. The concept is relative and dynamic. Vulnerability is most often associated with poverty. But it can also arise when people are isolated, insecure and defenseless in the face of risk, shock or stress. People differ in their exposure to risk as a result of social, group, gender, ethnic or other identity and other factors. Vulnerability may also vary in its forms. The reverse side of the coin is the capacity, which can be described as the resources available to individuals, households and communities to cope with a threat or to resist the impact of a hazard. Such resources can be physical or material. But they can also be founded in the way a community is organized or in the skills or attributes of individuals and organizations in the community. Vulnerability is generally defined as the diminished capacity of an individual or group to ‘anticipate, cope with, resist and recover from’ the impact of a natural or human-made hazard (*Blaikie et al.1994; Wisner et al. 2004*).



The root causes of this vulnerability lie with the lack of access to the resources that allow people to cope with hazardous events – such as income, education, health and social networks. This access may be gendered, in that women and girls in general tend to have less access to, or control over, assets than men and boys. Vulnerability may also be related to the roles women and men play in society.

Sometimes it is the men who are more vulnerable due to their socially constructed roles as providers and protectors that place them in situations of higher risk. While in most societies men are assumed to be the main income earner, or play the key ‘productive’ role, women have a ‘triple burden’. Typically women juggle triple roles, while women’s vulnerability has to become assumed. Their capacity to not only respond individually but collectively to hazards is less well documented.

The invisibility of women and girls individually but collectively was highlighted when UNISDR took as it focuses for the 2012 International day for disaster reduction.

Vulnerability is the condition determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards (UN 2009). Vulnerability is ‘insecurity, the reverse of security’; it reflects “the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard.” It involves a combination of factors that determine the degree to which someone’s life and livelihood is put at risk by a discrete and identifiable event in nature or in society (Blaikie et al 1996:8). Vulnerability refers to exposure to contingencies and stress and difficulty in coping with them. It has two components: i) an ‘external’ side of risks, shocks and stress to which a structure, individual, household, community or nation is subject; and ii) an ‘internal’ side of lack of resources to cope without damaging loss (Hossain et al 1994). A human condition or process is resulting from physical, social, economic and environmental factors which determine the livelihood and scale of damage from the impact of a given hazard.

Rebecca Pearl and Irene Dankelman in their book ‘Gender aspects of natural disasters-Women’s strategies’; claimed that in disaster management, coping means the trends and techniques where people gain their expected results

by using their property. It is very much related with capacity. Strategies can be defined as a set of activities or mechanism by which people try to survive in disasters, recover their situation and develop their conditions after disaster. Women are primarily perceived as the main victims of climate change and not to as positive agents of change and not as contributors to livelihood adoption strategies. Natural disasters could also provide women with a unique opportunity to challenge and change their gendered status in society. Women have been willing and able to take an active role in responding to disasters. In general women have proved to be effective in mobilizing the community to respond to disasters and in disaster preparedness and mitigation. “Violence against women is one disaster that men can prevent. The campaign proved effective in changing attitudes towards violence against women.

Women usually have fewer assets than men to recover from natural disasters and usually don’t own land that can be sold to secure income in an emergency. Among the problems women identify when having to adapt to climate change, include lack of safe land and shelter, lack of other assets and resources, limited access to material and financial resources, lack of relevant skills and knowledge, high prices of agricultural inputs and women’s access to services. However, worldwide women are starting to adapt to a changing climate and can articulate what they need to secure and sustain their livelihoods more effectively. Local strategies for adapting to climate change provide valuable lessons. Women often have a clear sense of what they need to adapt better. In several studies women have voiced their priorities in times of disaster: As per the studies of ” Elaine Enars on, June-2006 Applied Disaster and Emergency Studies Department Brandon University, Manitoba on the topic SWC Fact sheet; Women and Disaster”. Disaster sociologists see natural, technological and human-induced disasters as fundamentally social events reflecting human decisions about the organization of social life in the physical environment. Not the physical hazard (e.g. spring flooding) but the socially constructed vulnerability to it (e.g. low-income women living in mobile homes on flood plains) is at the heart of the process of “designing disasters.” Unsustainable development, environmental degradation, urbanization, coastal population growth and climate change are significant root causes of modern disasters which cause growing social inequality within and between societies. The risk

of exposure to the effects of disasters is not distributed equally but reflects the fault lines of any society. Social class, race and ethnicity, age, and physical abilities are generally recognized as determinants of vulnerability but gender is conspicuous by its absence. This gender blindness may reflect the urgency of immediate need in humanitarian relief and the misperception of disasters as social leveling events. Emergency management also continues to be dominated by men. A 1998 study in Australia found that just 5% of participants in emergency management courses were female; while, that same year just 10 of the 67 counties in Florida that had emergency management offices employed female directors. Women often have less access to what disaster managers consider to be key assets for survival and eventual recovery, e.g. diverse income, health and safety, time, information, transportation, language skills, citizenship status and social support. The urgent need to meet family needs in the aftermath also increases their dependence on external aid. Women are far more likely than men to seek help over the long-term from outside agencies despite their resistance to “charity” and such practical obstacles as lack of transportation or child care to access disaster assistance services. Gender norms in some cultural contexts also restrict their ability to publicly seek help or use emergency shelters in which they come in to contact with unrelated men. Poor and marginalized girls and women are least likely to receive needed assistance, as are women whose everyday lives diverge from the norms embedded in traditional emergency management systems about male headship, heterosexual marriage, and women as caregivers not earners. For example, the Sri Lankan government offered 5,000 rupees (about \$49US) to families affected by the tsunami but, as only male-headed households were recognized in some parts of the country, many widows went without. When hurricane Andrew hit Miami, FEMA still adopted the head-of-household approach to relief. Even simple sanitary packs for women were reportedly hard to come by in the wake of the tsunami. Men also tend to have more access to paid reconstruction jobs while women’s home-based livelihoods take second place in the rebuilding process.

Especially in less developed countries, women’s grassroots organizations are often engaged in disaster mitigation, preparedness, and relief and reconstruction efforts. In India, the Self-Employed Women’s Association

[SEWA], a union for women in the informal sector, provides disaster insurance to poor women through women’s banks as well as training in seismically-resistant construction. Local SEWA chapters helped governmental authorities direct relief supplies and provided resources to help women begin to earn again while still in tents following the 2001 Gujarat quake.²³ The Foundation for the Support of Women’s Work in Turkey built on existing centers to create safe space for women after a major earthquake, serving over 10, 000 women and children. Tenant housing coops were developed by over 100 quake-affected women who also conducted their own post-disaster impact assessment research for the benefit of local government.

Possible Risk Reduction Measures during Flood

Mapping of disaster prone areas is the primary step involved in reducing the risk of the region. Historical records give the indication of the flood inundation areas and the period of occurrence and the extent of the coverage warning can be issued looking into the earlier marked heights of potential threat. In the coastal areas the tide levels and the land characteristics will determine the submergence areas. Flood hazard mapping will give the proper indication of water flow during flood.

Land use control will reduce danger of life and property when water inundates the flood plains and the coastal areas. The number of casualties is related to the population in the area at the risk. In areas where people already have built their settlements, measures should be taken to relocate to better sites so as to reduce vulnerability. No major development should be permitted in the areas which are subjected to high flooding. Important facilities like hospitals, schools, should be built in safe areas.

Flood Management: In India systematic planning for flood management came with the five year plans particularly with the launching of national program of flood management in 1954. During the last 48 years different methods of flood protection structure as well as nonstructural have been adopted in different states depending upon the nature of the problem and local conditions. Structural measures include storage reservoirs, flood embankments, drainage channel, anti- erosion works channel work detention

basins etc, and nonstructural measures include flood forecasting, flood plain Zoning, flood proofing, disaster preparedness etc.

Flood control aims to reduce flood damage. This can be done by decreasing the amount of run off with the help of reforestation, protection of vegetation, clearing of debris from streams and other water holding areas, conservation of ponds and lakes etc. Flood diversion includes levees, embracement's, dams and channel improvement. Dams can store water and can release water at manageable rate. But failure of dams in earthquakes and operation of releasing the water can cause floods in lower areas.

Materials and Methods

Aim and Objectives of the Study

Main aim of the study is to understand the effect of Natural Disasters on Women.

1. To understand the vulnerability of women in natural disasters.
2. To make aware of coping capacity of women in natural disasters.
3. To understand the major measures taken for reducing the vulnerability of women.

Research Design

The researcher used descriptive research design for the study. One of the major hypotheses of the study was on the significant relationship between the vulnerability and coping capacity of women. The researcher used questionnaires for conducting the study. The universe of the study is the flood affected women in Thalavadi Gram Panchayat. The unit of study is vulnerability and coping capacity of women in natural disasters. The researcher used convenient sampling method for data collection. Statistical methods will be used to analyze the collected data.

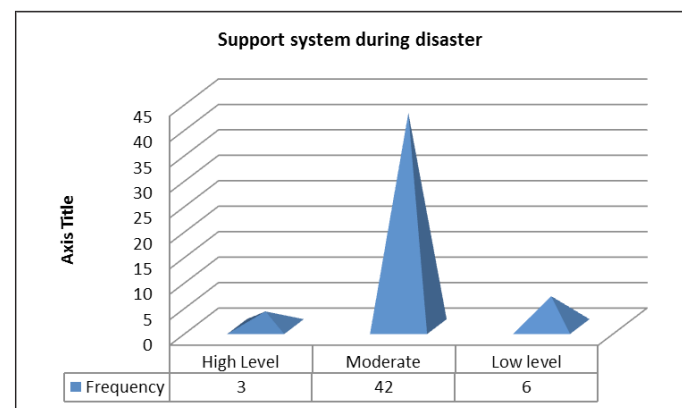
Results

For the research purpose data were collected from the Thalavadi Gram Panchayat. 51 women respondents

were given questionnaires related to the effects of flood, vulnerability of women and coping capacity of women during disaster.

The age wise distribution of the respondents shows that the respondents are from different age groups. These respondents belong to the age of 20-30, 41-60, and 61-80. The highest age group is in between 41-60. Among the respondents most of the women are married. Regarding the Occupational status of the respondents, most of the women in the community are employed. They have the capacity to withstand their life. As per the monthly income of the respondents 84% of the women draw less than Rs.10000. 16% of the women have more than monthly income of Rs. 10000. Education is one of the most important factors which influence the factors like vulnerability, coping capacity, preparedness etc. People who are more educated could reduce the impact of disasters. They have more awareness about the disasters and can ensure the community participation compared to people who are not educated. Educational Status of Women shows that majority of the respondents have not completed 10th class and 27% of the respondents have completed 10th standard.

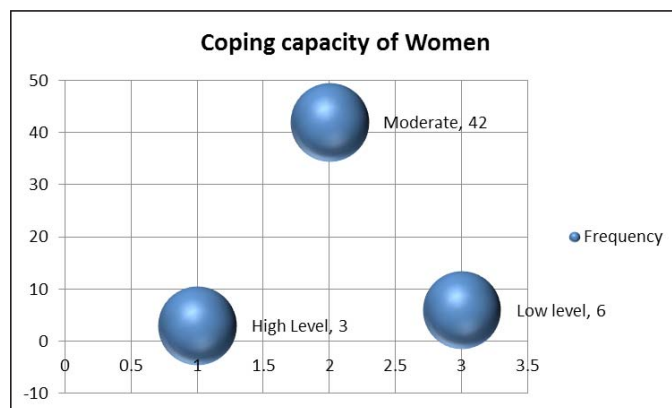
Influence of Disaster among Women: This table shows the influence of disaster among women. Influence of disaster among the women is at moderate level. It means how the flood or disaster influences the economic status of women. Flood affected the pregnant women at moderate level. It is also related with the physical losses, psychological problems, daily livelihood, and water borne diseases, sleepiness, and emotional disturbances. As per the data from respondents we can realize the influence of disaster among women is at moderate level.



Support System during Disaster

The above diagram is about the participation of supporting system during disaster. It shows the participation of local self-governments during disaster and how much it is helpful for supporting the affected community. It says about the medical aid, the participation of non-governmental institutions, presence and the support of neighbors during disaster, support of governmental institutions during disaster, the support of family members, the presence and support of Kudumbasree and other organizations in supporting the affected community.

Coping Capacity of Women



The above table says about the coping capacity of women during flood. Coping capacity of women was analyzed by seeking information about the impact of flood in the previous years and how they faced the disaster during the period, precautions taken before the disaster, measures taken for preventing the impacts of disasters, ability of women for preventing the impact of disaster. As per the data, coping capacity of women is at a moderate level.

Discussion

From the study we can understand the vulnerability and coping capacity of women in natural disasters. It is widely known and accepted that disasters affect women and men differently. Women as vulnerable community have less coping capacity to face the disaster. It can be considered on the basis of physical, psychological characteristics. Here the governmental system, local self-government, non-governmental organizations, voluntary organizations have a pivotal role to care for the vulnerable groups. The most important problem that we found were the limitations

of local self-government in dealing with the assistance of financial aid to the people. During disasters the people couldn't get adequate medicines or medical care. The Local self-government camps among the people during disaster. The governmental system gave proper awareness about the communicable diseases.

Flood was unpredictable and heavy rain happened during the time of flood. Mining of soil from water resources and deforestation are the major reasons for the flood. Most of the time local self-government failed to take effective initiatives for reducing the impacts of flood. Government was not able to make successful preparedness programs in dealing with flood.

The local self-government officials argued that they organized awareness camps, ensuring financial support, sanitation facilities and distribution of funds. The primary health center conducted classes related to sanitation programs. Flood and drinking water scarcity became crucial issues in rainy seasons. There are several causes of flood which differ from region to region. The causes may vary from rural area to an urban area. Some of the major causes are heavy rainfall; the nature of river bed which reduces the water carrying capacity of the rivers, blockage in the drainage that lead to the flooding of the area, landslides blocking of the flow of stream, construction of dams and reservoirs. In areas that are prone to cyclone, strong winds accompanied by heavy down pour along with storm surge led to flooding. While discussing with the respondents about the economic status during flood. They shared the information that the government system was not effective to help the community. The local self-government couldn't get sufficient fund from the revenue department of the state. The District Disaster Management plan is very essential for the distribution of fund in affected area during disasters. But unfortunately the district has no district disaster management plan. As per the framework of National Disaster Management Authority all the districts of each state have the DDMP's. DDMP is not established in the Alappuzha district. DDMP plan must be needed for the effective planning, co-ordination in related with all the affairs of disaster management system. The collaboration of all the government departments would be very helpful for reducing the physical, social, economic impacts of disasters. It is very essential that effective training programs should be implemented for increasing the coping capacity of women. Community is the real victim of all disasters so community participation must

be implemented in all phases of disasters. Community is well prepared to face the impacts of disasters. It is very important matter that the participation of non-governmental organizations, voluntary organizations, and community clubs are less during the disasters. So the non-governmental organizations must be aware about the role of these institutions during disasters.

Recommendations

Here we have to discuss the measures to increase the coping capacity of women. While women are primary users of emergency help systems, male-dominated planning and relief systems typically exclude their voices and concerns. International organizations working toward gender-sensitive disaster response identify these and other concerns in project planning and implementation: Following measures are helpful to increase the coping capacity of women community.

- The need for consultation with women's group and material support of Women's advocacy groups.
- Women's organizations and networks as resources through the disaster cycle.
- The need for culturally competent and gender aware staff in humanitarian relief.
- Livelihood recovery project recognizing women as environmental resource users and managers.
- Barriers to women receiving and acting on emergency communication and warnings.
- Women have increased risk of gender violence in the aftermath of disasters.
- Women's need for income and the restoration of their livelihoods after disaster.
- The need to support women in their formal and informal roles as caregivers to disaster impacted children, dependents etc.
- Reproductive health care in emergency and temporary shelters.
- Women's need for gender and aware psycho-social support.
- Women's increased risk of forced or early marriage (e.g.; Tsunami marriage to older men).
- The need for gender specific data as a planning, budgeting and evaluation tool.

Summary and Conclusion

Women are more vulnerable during all types of disasters whether it is natural and manmade. Traditional gender relations are often reinforced as disasters unfold and existing inequalities exacerbated, leaving women even more vulnerable to subsequent disasters. There are also moments of opportunity for women to challenge prevailing gender norms, e.g. using relief funds to leave an abusive relationship, developing new job skills through reconstruction work, and gaining self-confidence and leadership skills through collective action to meet women's needs and interests. The skills and knowledge of women as providers, caregivers, community organizers and volunteers, informal neighborhood leaders, family managers, and advocates for those who are socially marginalized make them key partners in disaster management. Policy makers and practitioners increasingly see that gender sensitivity is not a luxury but an essential quality of effective disaster risk management. The scarce resources made available to mitigate hazardous living conditions, provide emergency relief and recovery assistance and rebuild in ways that increase community resilience to hazards and disasters must reach those who are most at need. The mobilization of women around the world after disasters is not, however, based on efficiency values or practical relief and recovery concerns but on moral claims to women's fundamental human rights in disasters and the need for women's leadership before, during and after disasters. Safer, more just, sustainable and disaster-resilient communities cannot be built without the full and equal participation of women and men alike.

References

- Food and Agriculture Organization of the United Nations (FAO). (2015–2016). El Niño Early action and response for agriculture, food security and nutrition report - Working Draft (26 January 2016) Update #5.
- Meleis, A. I. (2005): *Safe Womanhood is not safe motherhood: Policy implications*. Health care, Women Int. 26(6), 464-471.
- Enarson, E., & Betty H. Morrow. (1998). "Why Gender? Why Women? An Introduction to Women and Disaster," in *The Gendered Terrain of Disaster: Through Women's Eyes*, ed. Elaine Enarson and Betty H. Morrow (Westport, CT: Praeger).
- Enarson, E. (2006). *Gender and Natural disasters*, Fact Sheet, Women, Health and Development, Pan

American Health Organisation, Regional Office of the WHO Publications..

- Blaikie, P., Cannon, T., Davis, I., & Wisner, B. (1994). *At Risk, Natural hazards, People's vulnerability and disasters*. London: Routledge Buchanan-Smith and Christopolos (2004) '*Natural disasters amid complex political emergencies*', *Humanitarian Exchange* (27), Humanitarian Practice Network, London: ODI, p. 3.
- Gokhale, V. (2008). Role of women in disaster management: An analytical study with reference to Indian society. World Conference on Earthquake Engineering, Beijing, China.
- Mileti, D. (ed.). (1999). *Disasters by design: A reassessment of natural hazards in the United States*. Joseph Henry Press: Washington, D.C.
- Anderson, M. (1994). Root causes of women's vulnerability to disasters.
- Wisner, B., Blaikie, P., Cannon, T., & Davis, I. (2004). *At risk: Natural hazards, people's vulnerability and disasters*. London: Routledge..
- Pearl, R., & Dankelman, I. (2008). *Gender, Climate Change and Human Security*. Hellenic Foundation for European and Foreign Policy (ELIAMEP), Athens, Greece.
- Enars, E. (2006). *Applied disaster and emergency studies*. Department Brandon University, Manitoba.