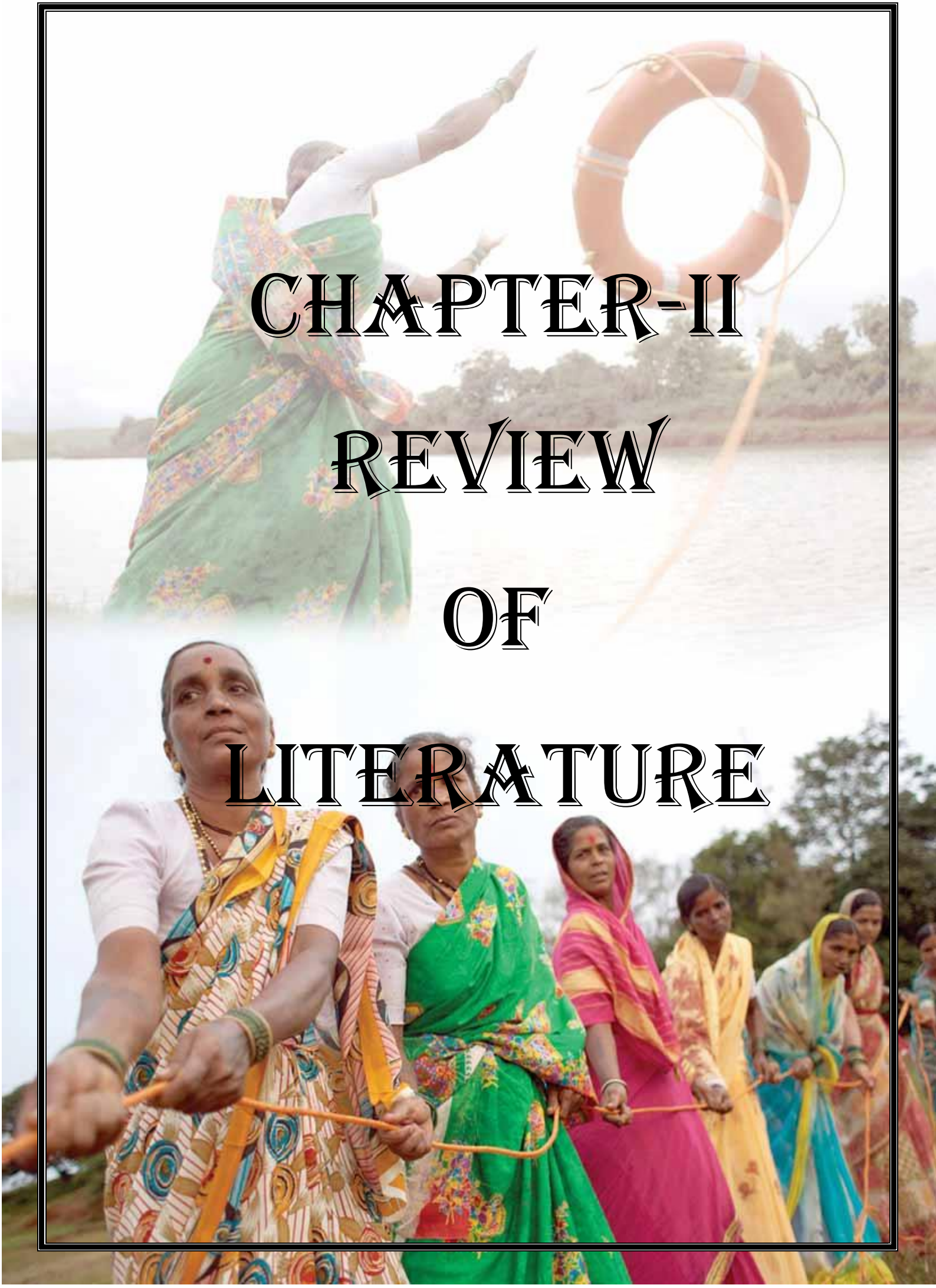

CHAPTER-II

REVIEW

OF

LITERATURE

CHAPTER - II

REVIEW OF LITERATURE

"An ounce of prevention is worth a pound of cure."

- **Benjamin Franklin**

Review of related literature is an important effort as it provides comprehensive understanding of what is already known about the topic. The main function of citing review of literature is to provide a basis for developing a frame work. Familiarity with research work of others provides up-to-date knowledge of the latest developments, findings, recommendations, tools and loop holes of researches. It helps to avoid duplication of what has already been done, and provides useful directions and helpful suggestions for research work. Thus an attempt has been made in this chapter to review the studies related to this investigation.

STUDIES IN INDIA

Mujumdar, P. P. et al (2016). The Chennai floods 2015 in the city and surrounding areas in Tamil Nadu have brought the need for developing a proper understanding of urban floods to help enhance the engineering, administrative and societal resilience. Therefore, an attempt was made in this report to present issues that contributed to the devastating floods in Chennai city during November December 2015. Brief discussions on the after-effects of the floods and the responses were also provided. Although much of the material presented in the report is collated from information available in public domain, results from a few preliminary analyses carried out by the authors - especially on estimation of the return period of the rainfall recorded during the period, inferences on the atmospheric drivers and the hydrologic responses - were also included. Questions related to the influence of global climatic events such as the El Nino on the high intensity rainfall recorded during the event and increasing frequencies of such high intensity rainfall because of climate change and urban heat island effect remain unresolved and needed further observations and model-based investigations. However, it is possible to estimate the hydrologic response in terms of the flood inundation in the City for a given intensity of rainfall, if appropriate data was made available to the scientific community. Such estimates would be useful for improving disaster preparedness and management. It was also possible to estimate the

impact of urbanization on the occurrence of floods in future so that further development in the City could be made sustainable. Further efforts on enhanced forecasting of extreme weather events and associated hydrological responses can also aid water management decisions such that the contribution of human regulations (such as reservoir operation) on aggravating the floods can be avoided. To help timely administrative responses, real time flood alerts with sufficient lead time are necessary. Such flood warning should be developed by integrating spatially distributed forecasts of high intensity rainfall in the City with hydrological models to simulate overland flow and 39 storm water drainage. Radar measurement of rainfall and monitoring of the flow at critical locations in the rivers running through the City and drainage systems would greatly help in flood forecasting. Also, high resolution terrain data from digital elevation models will be necessary for such an exercise. The real time flood alerts could then be employed to develop Expert Systems to provide decision alternatives for flood management. With the lessons learnt from the deluge, the scientific community and the administrators of the city of Chennai now have an opportunity to pro-actively demonstrate the effectiveness of scientific and technological interventions in managing urban floods in the country. It was expected that the issues flagged in this rapid assessment report provide a starting point for further in-depth scientific studies.

UNCRD, (2013). Community Based Disaster Management: Empowering Communities to cope with Disaster Risks: Disaster Reduction is one of the prime condition of Sustainable development. Natural disasters severely hamper the progress and achievements of sustainable development while, at the same time, physical infrastructure which constructed by human beings may itself constitute a source of risk in the event of future disasters. From the perspectives of environmental degradation, human intervention, and security aspects, disaster management is an unavoidable issue and should be given priority. This study covered all the approach which seeks communities at risk: prevention, mitigation, preparedness, response and recovery. In order to build disaster-resilient communities, they first need to be empowered so that community members could cope with the adverse effects of natural hazards. This was the most effective approach to achieving sustainability in dealing with natural disaster risks. UNCRD was carrying out various community-based programmes to establish disaster prevention as an essential component of

sustainable development. Its activities include improvement of the safety levels of core community facilities such as schools; the dissemination of best practices in disaster risk management at the community level; and the formulation of integrated programmes for sustainable development through Disaster Risk Management initiatives. Some findings of those programs which engaged communities to deal with disaster risks were local community actively participated in risk management process. Disaster Mitigation programme for community empowerment are generally very short term and there were always issues of their sustainability. Government, non-government and international organizations implemented various programmes before and after the disasters. Most of them were very successful during the project period, but gradually diminished with the passage of time. There were many reasons for this kind of phenomena, however, lack of effective participation for long period and capacity building of the local communities to peruse the program remains major factor for lack of sustainability. It was accepted that governments had the prime responsibility for managing disasters and for taking into consideration the roles played by different players. In the past, top-down and command-and-control approaches were oftentimes used to manage the consequences of disasters. In that approach, decisions came from higher authorities based on their perception on the needs. The communities had been served as mere “victims” or receiver of aid. In practice though, this approach was proven to be ineffective. It failed to meet the appropriate and vital humanitarian needs. Moreover, it increased requirements for unnecessary external resources and created general dissatisfaction over performance despite exceptional management measures employed. This was due to the fact that the community, as the primary stakeholder and recipient of the direct impact of disasters, was not given the chance to participate in the process of decision-making and implementation of activities. On the other hand, communities if left alone had limited resources to fully cope with disasters. In many developing and underdeveloped countries, those who suffer the most were the poor, who, in the first place had limited survival resources and did not enjoy adequate infrastructure and access to social services. Community empowerment for disaster risk management demanded their participation in risk assessment, mitigation planning, capacity building, participation in implementation and development of system for monitoring which ensured their stake.

Lloyd, Barrette, Chaudhary P., Chenji S. (2013). Leveraging Resources for Community Resilience Building. A study of multi-hazard affected villages in Bihar documenting best practices seek to better understand the processes of leveraging government resources for CBDRR and to understand how such processes could be integrated into existing flagship schemes. In order to carry out this study, 12 villages and 11 schools in Bihar were visited where CBDRR has been implemented. An analysis of UNICEF inputs into the CBDRR programme compared to its outputs was employed to understand programme effectiveness. Focus was given to particular funds and resources that were leveraged so as to highlight programme outcomes in clear and tangible terms. Along these lines, the methods used for leveraging resources were identified and examined to better understand how outcomes were obtained. The purpose of this study was to better understand the current processes of leveraging government resources for CBDRR and to integrate CBDRR into the GOI's flagship programmes. Therefore, the objectives of this study were the resources leveraged from government schemes for risk reduction, the processes followed to leverage resources for risk reduction and the existing scope in various government schemes for leveraging DRR resources. This study identified multiple best practices for leveraging government schemes and implementing risk-informed projects at the local level. UNICEF investment in Bihar's CBDRR programme had been minimal as the programme relied strongly on existing government resources and development schemes. While initial mobilisation and training of the community were shown to be key factors in starting the CBDRR process, minimal financial support was needed as community leaders and volunteers had been trained to take on this work. Some of the findings from this study were that the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) was the most used government scheme within villages and Sarva Shiksha Abhiyaan (SSA) was the most used government scheme with school to address and reduce disaster risk. A Village Disaster Management Committee (VDMC) and School Disaster Management Committee (SDMC) with membership that includes influential people from the community were benefitted from leveraging and sustainability purposes. Influential people include one or more of the following: Mukhiya, Ward member, Auxiliary nurse midwife, Anganwadi worker, school headmaster or panchayat secretary. Systemisation of VDMC and SDMC membership calling for involvement of both community volunteers and at least one duty bearer is a strong means to ensure that the CBDRR process will be able to get off

the ground. Identification and training of volunteer DRR catalysts at the village level led to sustainability of the CBDRR programme beyond the period of UNICEF intervention. Interface meetings between government officials and community members were found to be a best practice for raising awareness about community risks and for leveraging government funds for proposed projects. Streamlining these practices within scheme guidelines could increase their adaptability for DRR and ensured that all communities could utilize them for such purpose.

Patel, B. (2012). Awareness regarding Community Based Disaster Preparedness for Flood among women: This study was focused on some awareness and preparedness done by women for flood. The objectives of this study were involvement of women in search, rescue and evacuation process and services provided by Government and Non- Government organization for disaster mitigation. This study told about women particularly middle aged rural women has selected for giving training and were living in a joint family. The joint family system has been broken down due to urbanization but in this study more number of Joint family has been found the villages of Anand District. The education level of women was affect to the awareness level regarding flood mitigation. Those women were not given training, so the awareness level as they were not aware about some important components like VDMP, VDMC etc. was so lower. Gram Panchayat was one of the important helping institutions at the time of Flood and other Non- Government Institutes also came to give help at the time of flood.

Joshi, Ganpatrao S. (2012). This study focused on to develop and assess the effectiveness of Training Manual on Disaster Management in terms of Knowledge and Self-expressed Practices of teachers in selected schools of Pune city. This study is mainly related to the "Disaster management (DM)". Its main focus was to highlight the Human Resource Development in disaster management. Capacity building of the community is one of the important aspect of human resource management. People need competencies like knowledge, attitude and practices to perform tasks. Success of the disaster management mostly depends upon efficient capacity building of the society through educational and awareness programme. This study was to evaluate the effectiveness of training manual on disaster management in terms of knowledge and self-expressed practices of secondary school teachers in Pune

city during 2009-11. The purpose of the study was - Disasters are on rise, at global as well as in India. The loss of life and property due to disasters had increased substantially during last two decades. People are now at risk from disasters. Flood, Earthquake, Terrorist attack, fire and road accidents has created concern across the country for preparedness. There was urgent need to adopt multidimensional, multi-disciplinary and multi sectoral approach to reduce the losses. School children and their teachers were some of the most receptive group to disaster preparedness education and training. These children, in turn share this valuable education with family and community. Recognizing the value of school children as "multipliers" of disaster information. School teachers were valuable social group to educate children about disasters. This strategy was proving its long term effectiveness. Justification of the study was based on the facts that safety of the school children was basic right of children. Teachers must be aware of disaster management in schools and gain knowledge and implement safety practices within school campus. Identifying learning needs of adult learner is very important aspect in disaster education. According to Cox 2001, adult will learn when they feel a need to learn at their own pace. Disaster management booklet, training manual, handouts were easy ways of learning at own pace and it was preferable means of learning on the topic. Hence researcher had taken initiative to develop a training manual and assess its effectiveness.

National State Disaster Management Authority, (2010). A case study on Flood Frequency and Ethno-History of Flooding" Rohini and Rapti (Name of rivers): Gaighat is situated on the bank of the Rapti River between the Rapti and the Bathuanala River. It has been affected by flooding and land cutting for as long as the villagers can remember. In most years, flooding had occurred for a brief period and hasn't had a major impact on life. During the period from 1952 to 1957, however, parts of the village were cut down by the shifting course of the Rapti and villagers were forced to settle elsewhere or to build new houses in agricultural fields. This history repeated itself between 1960 and 1980, when the shifting course of the river destroyed more land and houses. As a result, approximately half of the villagers had migrated to safe places. The remaining villagers had moved their dwellings into agricultural fields. As a result of the regular disruption and shifting, Gaighat had been sub-divided into three smaller villages-Gaighat, Rampur and Sonbha Ehtemali. In the late 1980s, an embankment was constructed to check the problem of flooding and

much of Gaighat was indeed protected from annual floods to some extent. Many houses, however, were located beyond the embankment and most of these collapsed one after another as the river encroached upon them. In 1998 the Gorakhpur Disaster Management Risk Flood Risk Management Flood Disaster embankment breached and the village experienced the worst flood in its history. The initial breach occurred in the adjacent village of Malpurwa and after that dozens of more breaches occurred. The resultant flash flood destroyed many structures and the water also remained in the area for a long period afterwards. There was dangerous flooding again in 2001, 2007 and 2009 but not on the scale of 1998. The history of Gaighat was typical of the history of many villages between the Rapti and Rohini. Finding were collecting fodder also becomes very difficult and the responsibility rests with the women as the men went to nearby towns to look for work. Everyone's health had suffered. The findings of this study were, during disaster situations, the productive role of women outside the home was totally disrupted as they were neither able to work in their fields nor had the time to work as wage labourers. They therefore neither had access to nor control over wages. During emergency and disaster situations, and during the periods following them, household chores and activities increased dramatically house repairs, cleaning, drying and fixing belongings, collecting fuel wood and fodder, etc. regular household activities would be continued. Post-disaster periods were the most difficult for women, with reclaiming fields for planting added to repair and maintenance activities as well as regular household chores. In such situations, they had no option but to sacrifice their sleep and time to rest. So, it could be concluded that women have to suffer a lot at the time of disasters, which also relate to this study. In this study women were considering one of the most vulnerable groups of society.

Mishra, S., et. al (2010). In an article Place attachment and flood preparedness was mentioned. Place attachment and the consequent emotional connections and ties that people have with environments affect their preparedness for natural disasters, such as floods. This study took up this research question for the understudied geographical region of Orissa, India. In particular, investigation focused on three kinds of place attachment, viz. economic, genealogical, and religious. Contextualized scales for place attachment and flood preparedness were developed for the survey. Data was collected from 300 residents in flood prone areas. Validity and reliability of the scales were established. Overall, place attachment was identified to significantly influence

flood preparedness. Hierarchical regression analysis was performed to determine whether the three factors of place attachment influence flood preparedness. Controlling for confounding effects of age and family type, regression analysis revealed that people having genealogical and economic place attachment did good preparedness for floods, but those with religious place attachment did not prepare for floods.

Rao, D.P. (2009) Disaster management. With the tropical climate and unstable landforms, coupled with high population density, poverty, illiteracy and lack of adequate infrastructure. India is one of the most vulnerable developing countries to suffer very often from various natural disasters, namely drought, flood, cyclone, earth quake, landslide, forest fire, hail storm, locust, volcanic eruption, etc., which cause devastating impact on human life, economy and environment, Though it was almost impossible to fully recoup the damage caused by the disasters, it was possible to minimize the potential risks by developing early warning strategies, prepared and implemented developmental plans to provide resilience to such disasters, Mobilize resources including communication and telemedicine services, and to help in rehabilitation and post-disaster reconstruction. Space technology plays a vital role in efficient mitigation of disasters. While communication satellites help in disaster warning, relief mobilization and telemedicine support, earth observation satellites provide required database for pre-disaster preparedness programmes, disaster response, monitoring activities and post-disaster damage assessment, and reconstruction, and rehabilitation. This study describes the role of space technology in evolving a suitable strategy for disaster preparedness and operational framework for their monitoring, assessment and mitigation and assessed gap areas and recommends appropriate strategies for disaster mitigation vis-à-vis likely developments in space and ground segments.

Devi, S. (2008). Awareness on Tsunami and need for Disaster Management education in Kanyakumari: The methodology adopted for the study was survey method. The samples selected for the study was 100 IX standard students studying in Tsunami affected areas in Kanyakumari. The finding revealed that in order to prevent Tsunami mangrove forest should be planted along the seashore. Further, if Tsunami warning is given, people can save themselves and their possessions.

Dekens, J. (2007). Local Knowledge for Disaster Preparedness : It is recent scenario that the importance of integrating local knowledge and practices into development and conservation projects had started to receive real recognition, but the approach was still far from being mainstream. This book is one of a set of three prepared to help increase awareness and understanding, particularly among implementing organisations, of local knowledge, practices, and contexts related to disaster preparedness, so that they could be used in disaster management activities. This first book summarised the results of a cross-disciplinary literature review, and presents a framework that could be used to help understand local knowledge on disaster preparedness. It highlighted the over-riding processes, including the need to understand the nature of the local knowledge, the transformation processes influencing it, the key dimensions, and the links between local knowledge, disaster preparedness, and poverty reduction. The book was an outcome of the project living with risk sharing knowledge on disaster preparedness funded by the European Commission through their Humanitarian Aid department (DG ECHO) as part of the Disaster Preparedness ECHO programme (DIPECHO) in South Asia, and by ICIMOD.

Raja, D.S. and Narasimhan, N. (2007). Inclusive Disaster and Emergency Management for Persons with Disabilities: The aim of this study was to serve as a primer on the needs of persons with disabilities in disasters and emergencies, and to provide a comprehensive compilation of effective policies, practices and strategies for inclusive disaster and emergency management. The goal had been achieved and there some policies for disabled persons regarding Disaster Management. This policy document would serve the right to lives for persons with Disabilities.

Balaji, et. al (2007). Disaster management has been the hot topic in recent times. A lot many management techniques had evolved through various discussions. All the management techniques that were being developed were understood by and confined to the intellectual community and hence lack mass participation. Awareness of the disasters was the only effective way in which one could bring about mass participation. Hence, any disaster management was successful only when the general public had some awareness about the disaster. In the design of such an awareness program, spatial data becomes imperative and for the analysis of the spatial data and

the representation of the results in spatial format, a Geographical Information System (GIS) became the obvious and effective choice. The usage of the spatial system provided the advantages of emphasis on the areas or locations which need more attention. This paper aimed at providing a methodology of designing a GIS based awareness program for earthquake, flood, landslide, drought, diseases and other natural and manmade disaster management. Further, the paper discussed the use of GIS to decide upon the better ways of creating awareness on the various factors mentioned above. The methodology suggested is in the Indian context emphasizes the role of zonation, literacy and media usage. It involved the use of maps showing Earthquake zonation, flood risk area zonation, landslide zonation, drought zonation, disease prone area zonation, land use, literacy rate, population density, media usage, occupation of people and rainfall. These maps which were input to GIS result in an analytically derived awareness program, which was then compared with a successfully operating awareness program. Such a comparison is also an indicator of the outcome of the awareness program. In conclusion, the proposed GIS based awareness program would improve the currently practiced disaster management programs and if implemented, would result in a proper dosage of awareness and caution to the general public, which in turn would help the activities of disaster management.

Allen, (2006). Community Based Disaster Preparedness could built capacity of local people and reduced the elements of vulnerability. CBDP strategies leveraged the knowledge and capabilities of local community resources. Successful implementation of CBDP would be required to understand of the communities involved. Community participation had played greater role for disaster mitigation.

Moazzam & Khan O.M. (2006). The role of GIS and Public Awareness for Disaster Management. For the past few years there was an increasing number of disasters with a large number of victims and significantly social and economic loses. This study emphasized on the awareness of the disaster and the analytical capabilities of GIS. To bring about mass participation in disaster management awareness of the disaster is the only effective way. In this paper the proposed GIS based programme will help to improve the currently practical disaster management programmes and of

implemented properly it created caution to the general public which in turn also help to manage with dangerous activities of disasters in future.

Gomathi (April 2006). It had been found out how vigorously Nagapattinam district was affected by the December 26, 2004 Tsunami, in particular the agriculture land at Naluvadanpatty in the district. Further on nothing the women's mental status; the investigator explained the important of giving proper counselling and guidance.

Reddy, V.D. (2006) Analysed on Earthquakes, oceans, tsunamis and coastal zones, the Japanese characters for tsunami mean, "harbour wave," and many people commonly refer to them as tidal waves, but in reality tsunamis had little to do with tides. They were creatures of the open ocean, train of giant waves that could travel for thousands of kilometres across the sea and still pack enough energy to smash towns and drown the unwary. The existence of ancient marine sediments on land was geologically evidence that the continents of the world once were largely submerged beneath the sea. The continental seas and the coastlines of the world have fluctuated greatly in the past and time and again the marginal seas grew and shrank with periods of the order of millions of years. In this paper an attempt is made on cause and effects of tsunami, tsunami warning system, preparedness and warning system of tsunami, coastal zone management.

Hale, T. & R. Moberg, C.R. (2006). Improving supply chain disaster preparedness: From the study brought out the five-stage disaster management process for supply chains as the framework for a proposed decision process for secure site locations. The decision process combined recommendations from FEMA's Disaster Management Guide with a set cover location model from the location sciences field to help establish a network of secure site locations. Supply chain interrupted caused by external events can have a significant financial and operational impact on firms not properly prepared. Therefore, improving disaster preparedness in supply chains was critical. One critical component of disaster management planning in supply chains was the storage of emergency supplies, equipment, and vital documents that would be needed in times of crisis. The goal of this paper was to propose a decision process for establishing an efficient network of secure storage facilities that could effectively support multiple supply chain facilities. Storing emergency supplies at every supply chain facility could be

cost-prohibitive. In addition, gaining access to emergency supplies that were stored at each facility may be prevented by some external events, such as fires or hurricanes, because items stored on-site were destroyed or were inaccessible. Therefore, the proposed secure site selection process could balance operational effectiveness and cost-efficiency by identifying the minimum number and possible locations of off-site storage facilities.

Gomathi (March 2005). If warning had been given, the destruction would have been made least during the December 26, 2004 tsunami prior to tsunami water engulfment took place. As there was no prior knowledge, there was lot of loss. There were many information that showed even the animals could realize the change on land. In some countries, as there are Tsunami warning centres, it avoids major destruction due to tsunami.

Lakshmi, S. (April 2005) the investigator has collected data of the tsunami victims. In that the children who had lost their parents and the helped got by those children. Experience of eye witness of disaster and who of the children needed guidance and counselling which was taken into account and guidance was given to the needy.

Kangabam, R.D., et.al. (2005). Preparedness among the Resident Community: In recent years, due to the technological revolution, the increased frequency, immensity, intensity and impact of natural disasters had claimed thousands of lives and caused immense material losses throughout the world. In recent decades this had been attributed to an increase in population worldwide and subsequent developments like urbanisation, use of vulnerable regions or degraded land, and alterations in the environment. About 250 ‘great natural catastrophes’ claimed the lives of about 1.4 million people, most of whom died due to windstorms or floods in the second half of the twentieth century. The 1990s alone had four times more disasters than in the 1950s and a 15-fold increase in economic losses during the same period.

Peter R.J., Trim (2004). An integrative Approach to Disaster Management and Planning: The frequency of major disaster both manmade and natural occurs due to increase in world’s population. A holistic setting was needed for disaster management and planning and shared responsibility was viewed as new initiatives in disaster management. The further attention was needed for the concept of community policy.

The local community leaders needed to be consulted during the disaster limitations and containment stage. It was essential, to brought the experts from overseas countries to communicate fully and openly with community leaders in order to gain the support of the community.

Perry and Lindell, 2003. Community Awareness regarding Disaster Mitigation Tools brought out highly proneness of certain places to natural disaster due to its geographical location, the groups were well aware of the natural disaster. The groups felt that the most likely form of disaster associated with the place was landslide follow by earthquake. The groups strongly felt that mock drill was very much essential for making people aware on how to cope up at the time of disasters. Most of them didn't had any disaster home plan and family disaster plan except few of the members of the group. There was lack of knowledge on the group's members about the community condition and resident of the community. The groups as a whole had poor knowledge on the governmental and other services available following a natural disaster and they were not well prepared to meet disaster in case of it occurs anytime in the locality or community.

Bremer, M.D (2003). Policy Development in Disaster Preparedness and Management: This study identified how assigned indicators were used to measures the level of health care which may improve disaster preparedness and management thereby reducing human suffering. The cause for vulnerability such as climate, geography, culture, religion, gender, politics and economy was studied. The level of public health and health care services provided by the primary health care system advocated by the world health organization were estimated and possible methods for improving disaster management were suggested. Major relief organizations representatives were interviewed on their relief policies. Measures to improve relief and policies were formulated in different aspects of public health primary health care. The quality of relief measures provided to disaster victims can be reduced for the reasons like proper public health indicators had not yet been developed, lack of efficient coordination, overestimated or partly irrelevant, insufficient relief was provided, because of delay bureaucracy relief and policies on the delivery of disaster relief had not been developed.

India is one of the most disaster prone countries in the world. Due to its unique geo-climatic conditions, 24 out of 35 States and Union Territories are vulnerable to one or the other geo-climatic disaster. According to the insurance company estimates, natural disasters represent 85% of insured catastrophe losses. If one adds the losses in countries like India, where most of the property of the people, especially in the rural areas remained uninsured, the losses are astronomical. The unique geo-environmental setting of the North eastern region vis-a-vis the Eastern Himalayas, the heavy rainfall, weak geological formations, accelerated rates of erosion followed by silting and meandering of rivers, very high seismicity makes the North East one of the most disaster prone regions in the country. Considering this, and the comparative inaccessibility, the North-eastern region demands special attention to minimize loss of lives and social, private and community losses and to ensure sustainable development. Vulnerability to natural disasters combined with socio-economic vulnerability of the people living in the region pose a great challenge to the government machinery and hinder scores the need for a comprehensive plan for disaster preparedness and mitigation. Training and capacity building of the officials dealing with emergencies would be an important instrument of disaster reduction and recovery. While natural hazards could not be controlled, the vulnerability to these hazards could be reduced by planned mitigation and preparedness measures. There needs to be concerted and sustained steps towards reducing the vulnerability of the community to disasters. Taking into consideration the value of development gains which are washed out through disasters, as also post disaster relief and rehabilitation is needed huge quantum of funds, any investment in disaster mitigation would yield a higher rate of return than any other development project. Also considered the developmental gains, which were wiped out because of disasters, all development schemes/projects would need to incorporate disaster assessment and vulnerability reduction as critical components in order that the development process be sustainable. Therefore, a paradigm shift had taken place with the shift in focus from reactive to proactive i.e. from relief to prevention and mitigation of disasters. In the Government of India, the Ministry of Home Affairs was the Nodal Ministry for disaster management except for drought, which because of its nature will 165 continue to be handled by the Ministry of Agriculture. Where a calamity/disaster pertains to a specific sector it would continue to be handled by the relevant Ministry with the assistance of the Ministry of Home Affairs - thus rail accidents would continue to be handled by the Ministry of

Railways, Airlines accident by the Civil Aviation, Epidemic by the Ministry of Health, etc. enhance the synergy and to extend the resource base for more effective implementation of flood preparedness programs. The IMD has been promised a major upgradation of its observational network, which should help improve the ability to forecast episodes of unusually heavy rain at least a day or two in advance. The Indian Space Research Organisation is creating a digital database with detailed terrain information that could be used for hazard zonation and damage assessment. The space agency was also acquiring an aircraft that would be equipped with an airborne radar so that imageries of disaster-hit areas could be quickly acquired and used to supplement information from earth-viewing satellites. A National Disaster Management Authority(NDMA) had been established as per the provisions of National Disaster Management Act, 2005 and similar bodies were set up at the State and District level too to enhance preparedness and provided a coordinated response in the event of a calamity. But it was most important to make sure that all these measures came together properly in order to improve resilience and enable an effective relief operation when catastrophes strike.

Victoria, L. (2002), Impact Assessment Study of the Orissa Disaster Management Project conceived to initiate Community Based Disaster Preparedness and mitigation linked to the development planning process in 1,100 villages in 10 blocks within 7 coastal districts (Astarang- Puri, Bahanaga – Balasore, Balianta – Khurda, Erasama, Balikuda – Jagatsingpur, Ganjam – Ganjam, Kantapada – Cuttack, Mahakalpada and Rajanagar – Kendrapada) The objectives of the assessment was to study the effectiveness and overall impact of the program, to check whether the project has enhanced the community resilience power to deal with risks, to determine the sustainability and replicability of the Community Based Disaster Preparedness (CBDP) model and determine the cost effectiveness of the programme. The project had been successful in putting disaster preparedness and mitigation on the agenda of the local government officials and PRIs. A capable local disaster management system integrated into the development process from the Village to Gram Panchayat and Block levels have been set within the Blocks covered by the project. The members of the Disaster Management Committees and Task Forces knew and demonstrated skills on disaster preparedness for cyclone and flood hazards. These core of volunteers mobilized the communities in disaster preparedness and mitigation. The

organizational mechanisms for disaster preparedness and response have checked during the August 2001 flood and in anticipation for the cyclone in November 2002. Case stories of how local and Community Based Disaster Management had been making a difference in the lives of villages in coastal has created commitment to sustain the process and replicate in other areas. The project had provided the Orissa Disaster Mitigation Authority much basis on which to sustain the Community Based Disaster Preparedness and Mitigation Process.

Enkson (1995). This study brings out that disaster preparedness worked as catalyst in the area of developmental disaster management globally. This study suggested that the modern disaster systems need to be focused on to the "emergent disaster management concept" working with a multi- hazard-multi-agency (MHMA). The new approach need to cover disaster caused by human beings which have become more and more common in the 20th century. Unlike earthquakes and other natural catastrophes, this "new species of trouble" afflict persons and groups in particularly disruptive ways. Changing characteristics of manmade disasters have made modem society more vulnerable than ever before. It was observed that attention must be paid to the experiences of communities suffering from these disasters if people were to maintain elementary confidence not only in them but also in society, government, and even life itself.

INTERNATIONAL STUDIES

Mohammad S. Huq, S. (2016). Community Based Disaster Management Strategy in Bangladesh: Present status, Future Prospects and Challenges: This study was focused on the necessity of community based disaster management, its barrier and its possible solution for the betterment of the affected people in the vicinity of disaster prone areas. Community participation is the most effective component to achieve sustainability in dealing with natural disaster risks. As a disaster prone country Bangladesh is affected by different types of natural hazards like tropical cyclones, tidal bores, floods, tornados, river bank erosions, earthquakes etc. almost every year and destroy many lives and resources of people. It is surrounded by thousands of rivers, in the North the Himalayan range and in the South the Bay of Bengal creates harsh weather especially for a large number of poor people live in the southern part of Bangladesh making them as common victim of natural calamities, sometimes the

vulnerability is so miserable that they must evacuate to some other new place. For sustainable development, the negative impacts of these natural hazards must be minimized that affecting the socio-economic condition. The prevention of occurrence of natural disasters influenced by natural causes might be impossible but it could be reduced by proper planning, management and human collective participation. From realization of this reality, the government of Bangladesh has adopted disaster management plans and programs for the mitigation of disaster and its possible adverse impacts. Construction of cyclone and flood relief shelters, adoption of disaster management plan, development of institutional framework, erection of flood protection embankments, development of strong, simple and understandable warning system that is linked to local, regional and national information system, awareness raising campaign, training program in disaster preparedness, community first aid, and cyclone shelter maintenance, installation of drinking water, food storage facilities and social safety net program are the initiatives taken by GOB (Government of Bangladesh) to reduce disaster intensity. This study analyzes the approaches to disaster management by grassroots community participation in Bangladesh based on literature review.

Alcayna. T., et.al. (2016). Resilience and Disaster Trends in the Philippines: Opportunities for National and Local Capacity Building: The Philippines is one of the most vulnerable for climate-related disasters. For populations subsisting at the poverty line in particular, but also the nation as a whole, daily lives and wellbeing are routinely challenged. The Philippines government takes disaster risk seriously and has allotted important resources for capacity building related to disaster and reduce population explosion and vulnerability, nationally and locally. This study explores the policy and institutional mechanisms for disaster risk reduction management and research which have been conducted in the Philippines related to disaster preparedness, management and resilience. This study draw on direct observations of and conversations with disaster management professionals, in addition to a review of the extant literature on resilience and disaster preparedness, in the Philippines. This was a descriptive study based on a search of mainly peer-reviewed studies but also articles, reports, and disaster risk reduction and response projects in the Philippines. Search words used in various combinations included, Resilience, Philippines, Disaster Risk Reduction, Disaster Preparedness, Community-based, Capacity-building.

Numerous activities in community based resilience and DRR have been identified across the whole disaster continuum. Yet, important gaps in research and practice remain. This study explores the policy and institutional mechanisms for disaster risk reduction management and research which have been conducted in the Philippines related to disaster preparedness, management and resilience. Research findings must then be translated in policy decisions with committed implementation. A greater prioritization of mitigation, prevention and preparedness is not only economically advantageous, but from a humanitarian point of view, reduces the human costs, and aligns with initiatives on sustainable development.

Hapsari1, R.I. & Zenurianto, M. (2016). View of Flood Disaster Management in Indonesia and the Key Solutions: Over the years, Indonesia has seen many flood disasters that have brought about great losses. The aim of this study was to address key issues that lead to flooding problems in Indonesia in response to the challenge of recurrent flood events. The glimpses of the past flood disaster profiles and ongoing flood management are presented. The problems with the current situation were identified and the critical solutions are recommended to manage flooding and mitigate the negative impact in a more sustainable way. This study showed that man-made factors, natural causes, and managerial issues are the factors that have contributed to the problem. The coordination and the public awareness were the challenges in improving the flood management. Efforts have been made to minimize the problems through legal framework establishment, community participation programs, and flood-control projects. In the post-disaster stage, the authorities and public had been quite responsive. However, prevention and preparedness were still lacking. The overall current flood disaster management may lead to more recurrent events and cause tremendous impacts. Sustainable actions were needed to solve these problems that include environment-based flood integrated countermeasures, improving water retarding function, eradication of deforestation, meteorological and hydrological prediction, and political will and law enforcement.

Terpstra T., Zaalberg R., and De Boer J. (2014). How Antecedents of Information Need Mediate the Effects of Risk Communication Messages: This study investigated the processes that mediate the effects of framing flood risks on people's information needs. In web based survey, respondents (n=1457) were

randomly assigned to one of three communication frames or a control frame (experimental conditions). Each frame elaborated flood risk and additionally refined the message by focussing climate change, the quality of flood risk management, or the amenities of living near water. The researcher had tested the extent to which risk perceptions, trust and affective responses mediate the framing effects on information need. As expected, the frames on average resulted in higher information need than the control frame. Attempts to lower fear appeal by stressing safety or amenities instead of climate change were marginally successful, a phenomenon that is known as a "negativity bias". Framing effects were mediated by negative attributes (risk perception and negative affect) but not by positive attributes (trust and Positive affect). This finding called for theoretical refinement. Practically, communication messages will be more effective when they stimulated risk perceptions and evoke negative effect. However, arousal of fear may have unwanted side effects. For instance, disaster terror could lead to lower levels of trust in risk management among citizens. Regular monitoring of citizens' attitudes was important to prevent extreme levels of distrust or cynicism.

Elizabeth, C. and Patel, Z. (2013). Perceptions and responses to Urban Flood Risk: In recent years, floods caused by heavy rain have caused major disasters in urban centres around the world. A lack of disaster preparedness in the global South has resulted in much damage in urban environments. These damages will have long-term repercussions for governance, communities and the natural environment. Heavy rainfall events are projected to become more intense and frequent due to climate change, and many recently affected areas may face more heavy rainfall and flooding in the future. Urban governance underpins the ability to manage disasters, through all phases of preparation, response and recovery. This study focused on flood risk in the global South, and how risk perceptions influence how local government and residents manage disasters. Findings from a case study in Ekurhuleni, South Africa indicated that local residents' risk perceptions are influenced by historical relationships of distrust with local government. Local government officials, on the other hand, indicated the range of challenges, such as limited capacity for implementing policy, that limit the effectiveness of local government's ability to manage flood related risks. In assessing how adaptive capacity can be developed in cities in the global South, the

potential for local government and community capacity to work in a complementary manner was explored.

Kohn S. et.al. (2013). Personal Disaster Preparedness: Experts generally agree that individuals would require partial or complete self-sufficiency for at least the first 72 hours following a disaster. In the face of pervasive environmental and weather hazards, emerging biological threats, and growing population densities in urban areas, personal preparedness was critical. However, disaster planners and policymakers required further information to create meaningful improvements to this aspect of disaster preparedness. A systematic review of the literature was conducted to determine the state of evidence concerning personal disaster preparedness. The purpose of this integrative review is to describe and analysed the professional literature as an intended basis for advancing the field of disaster management research and practice. Included in the review were 36 studies that met the predetermined inclusion criteria. The current evidence indicated that factors influencing preparedness attitudes and behaviours were complex and multifaceted, including demographic characteristics, trust in government efforts, previous exposure to a disaster, and number of dependents in a household. Furthermore, certain population groups, households, and individuals had different disaster preparedness needs and vulnerabilities. This constellation of findings had significant implications for community and national emergency planning and policymaking.

Subbarao, I. Edbert J.M., B. Hsu, Kristine & M. Gebbie, (2013). A Consensus-based Educational Framework and Competency Set for the Discipline of Disaster Medicine and Public Health Preparedness: Various organizations and universities had developed competencies for health professionals and other emergency responders. Little effort had been devoted to the integration of these competencies across health specialties and professions. The American Medical Association Centre for Public Health Preparedness and Disaster Response convened an expert working group (EWG) to review extent capabilities and achieve consensus on an educational structure and capabilities set from which educators could devise learning objectives and curricula tailored to fit the needs of all health professionals in a disaster. The EWG conducted a systematic review of peer-reviewed and non–peer reviewed published literature. In addition, after-action reported from Hurricane

Katrina and relevant publications recommended by EWG members and other subject matter experts were reviewed for congruencies and gaps. Consensus was ensured through a 3-stage Delphi process. The EWG process developed a new educational framework for disaster medicine and public health preparedness based on consensus identification of 7 core learning domains, 19 core competencies, and 73 specific capabilities targeted at 3 broad health personnel categories. The competencies could be applied to a wide range of health professionals who were expected to perform at different levels (informed worker/student, practitioner, and leader) according to experience, professional role, level of education, or job function. Although these capabilities strongly reflect lessons learned following the health system response to Hurricane Katrina, it must be understood that preparedness was a process, and that those competencies must be reviewed continually and refined over time.

Chaffee, M. (2013). Willingness of Health Care Personnel to Work in a Disaster: Effective hospital surge response in disaster depends largely on an adequate number of personnel to provide care. Studies appearing since 1991 indicated health care personnel may not be willing to work in all disaster situations—and if so, this could degrade surge response. A systematic review of the literature was conducted to determine the state of the evidence concerning the willingness of health care personnel to work in disaster. The aims of this review were to collate and assess the literature concerning willingness of health care personnel to work during a disaster, to identify gaps in the literature as areas for future investigation, and to facilitate evidence-based disaster planning. Twenty-seven studies met inclusion criteria (25 quantitative and 2 qualitative studies). The poof described there might be certain factors related to willingness to work (or lack of willingness) in disaster including the type of disaster, concern for family, and concerns about personal safety. Barriers to willingness to work have been identified including pet care needs and the lack of personal protective equipment. This review described the state of an emerging area of science. These findings have significant implications for community and organizational emergency planning and policymaking in an environment defined by limited resources.

Joelle Levac, et.al (2012). Household Emergency Preparedness: Global policies on disaster risk reduction had highlighted individual and community accountability and roles in reducing risk and promoting resilience capacity. Strengthening local preparedness is viewed as essential element in effective response and recovery. This study was on household preparedness published over the 15 years. It emphasized the complexity of preparedness, involving personal and contextual factors such as health status, self-efficacy, community support, and the nature of the emergency. In addition, people require sufficient knowledge, motivation and resources to engage in preparedness activities. Social networks had been identified as one such resources which contributed to resilience. A predominant gap in the literature was the need for evidence-informed strategies to over some the identified challenges to household preparedness. In particular, the construct of social capital and how it could be used to foster individual and community capacity in emergency situations required further study.

Bubeck, P., et al., (2012). Risk Perceptions and Other Factors that affect Flood Mitigation Behaviour: In flood risk management, a shift could be seen towards more integrated approaches that increasingly address the role of private households in implementing flood damage mitigation measures. This study showed two explanations. First on the basis of protection motivation theory, a theoretical framework was discussed suggesting that individuals' high-risk perceptions need to be accompanied by coping appraisal to result in a protective response. And second, it was pointed out that possible feedback from already adopted mitigation measures on risk perceptions had been considered by current study. It was found that factors such as coping appraisal were consistently related to mitigation behaviour. Therefore, that the current focus on risk perceptions as a means to explain and promote private flood mitigation behaviour was not supported on either theoretical or empirical ground.

Hughey, E. & Bell, H. (2012). A Model of Community Response: Institutional Structures and Effective Disaster Management: This study explored the utility of Hughey's (2003) Model of Community Response to Disaster applied within the context of the Bahamas. The model provides a framework for the systematic review of some of the institutional and social mechanisms that contribute to response quality. The model was applied using data collected on conditions, disaster management

processes and structures, and response outcomes before and after the implementation of a national Comprehensive Emergency Management (CEM) system. Results indicated that the model can be successfully applied outside the United States and supports a better understanding of the dynamic relationships between events, institutional and social structures and disaster management operations. In order to improve consistency and facilitate more robust and comparable results, the development of an accompanying metric was recommended.

Carla Stanke, et.al. (2012). The Effects of Flooding on Mental Health: While most people who were involved in disasters recover with the support of their families, friends and colleagues, the effects on some people's health, relationships and welfare could be extensive and sustained. Flooding could pose substantial social and mental health problems that may continue over extended periods of time. Flooding could challenge the psychosocial resilience of the hardiest of people who were affected. The review indicated that flooding affects people of all ages, could exacerbate or provoke mental health problems, and highlights the importance of secondary stressors in prolonging the psychosocial impacts of flooding. The distressing experiences that the majority of people experience transiently or for longer periods after disasters could be difficult to distinguish from symptoms of common mental disorders. This emphasised the need to reduce the impact of primary and secondary stressors on people affected by flooding and the importance of narrative approaches to differentiate distress from mental disorder. Much of the literature focused on post-traumatic stress disorder; diagnosable depressive and anxiety disorders and substance misuse were under-represented in the published data. Most people's psychosocial needs were met through their close relationships with their families, friends and communities; smaller proportions of people were likely to require specialised mental healthcare. Finally, there were a number of methodological challenges that arise when conducting research and when analysing and comparing data on the psychosocial and mental health impacts of floods. The HPA's findings showed that a multi-sector approach that involves communities as well as agencies is the best way to promote wellbeing and recovery. Agreeing and using internationally understood definitions of and the thresholds that separated distress, mental health and mental ill health would improve the process of assessing, analysing and comparing research findings. Further research is needed on the

longitudinal effects of flooding on people's mental health, the effects of successive flooding on populations, and the effects of flooding on the mental health of children, young people and older people and people who have responded to the needs of other persons in the aftermath of disasters.

Ajinder Walia and Sushma Guleria, (2012). The objectives of this study were to develop the process of Village Level Disaster Management Plan and highlighted the Standard Operating procedure for Disaster Management Committees and Disaster Management Teams in various phases of disasters. The findings of this study were women could not invited for the community meetings, qualification of VDMC members would be keep in mind at the time of selection and they were aware about the local community and also had given respect the local culture and norms. The VDMC members were aware about the values and taboos of the community and tried to solve it with support of other local leaders. The VDMC members were aware about cultural difference in the eyes of the community members and they could easily give help to vulnerable at the time of disasters.

Terpstra, T. (2011). Emotions, Trust, and Perceived Risk: Affective and Cognitive Routes to Flood Preparedness Behaviour: Despite the prognoses of the effects if global warning (e.g., rising sea levels, increasing river discharges), few international studies have addressed how flood preparedness should be stimulated among private citizens. This study aims to predict flood preparedness of Dutch citizens intentions testing a model of path, including previous flood hazard experiences, trust in public flood protection, and flood risk perceptions (both affective and cognitive components). Data were collected through questionnaire surveys in two coastal communities (n=169, n=244) and in one river area community (n=658). Causal relations were tested by means of structural equation modelling (SEM). Overall, the results indicated that both cognitive and affective mechanisms influence citizens' preparedness intentions. First, a higher level of trust reduced citizens' perceptions of flood likelihood, which in turn hampered their flood preparedness intentions (cognitive route). Second, trust also lessened the amount of dread evoked by flood risk, which in turn impedes flood preparedness intentions (affective route). Moreover, the affective route showed that levels of threat were especially influenced by citizens' negative and positive emotions related to their

previous flood hazard experiences. Negative emotions most often reflected fear and powerlessness, while positive emotions most frequently reflected feelings of solidarity. The results were consistent with the affect heuristic and the historical context of Dutch flood risk management. The great challenge for flood risk management was the accommodation for both cognitive and affective mechanisms in risk communication, especially when most people lack an emotional basis stemming from previous flood hazard event.

Bhamra, R., Dani, S. & Burnard, (2011). This study brings out that in an ever-more interconnected world (social, technological and environmental), no organization could retain a competitive position and survive disruptions as an independent entity. This article provides a review of resilience literature in its widest context and later its application at an organizational level context. The origins of the concept were reported and consequently, the various fields of research are analysed. The concept was shown to remain essentially constant regardless of its field of enquiry and had much to inform the fields of organization theory, strategy and operations management. This study analysed a number of areas for advancing research on capacity building or resilience, in particular: the relationship between human and organizational resilience; understanding interfaces between organizational and infrastructural resilience.

Kreibich, H., et.al. (2011). Recent changes in flood preparedness of private households and businesses in Germany: By using the focusing event framework, a comprehensive analysis of private households' and businesses' preparedness was undertaken in the aftermath of the 2002 and 2006 flood events on the Elbe River Germany. In August 2002, preparedness of households (n=235) and businesses (n=103) was lessen: 30% of the households and 54% of the businesses took no preventive measures before the flood event. Many undertaken emergency measures were ineffective, since only 26% of all households knew how to react when the flood warning came, and only 9% of businesses had an emergency plan in place. Due to this extreme flood, double loop learning occurred in many households and businesses, so that many did implement precautionary measures. The distribution of adopted precautionary measures for households fitted well to Preisendorfer's low-cost hypothesis, but does not apply for businesses. Only 10% of the households

(n=112), but still 29% of the businesses (n=41) were not prepared for fight against the disasters before the flood in 2006. Significant improvement in flood preparedness activities is still necessary. Particularly for businesses, regulatory programs and programs encouraging proactive behaviour should be applied. The focusing event framework proofed to be a useful tool for a differentiated analysis of the responses to and learning due to a disaster also in the commercial and private sector.

Hughey, E., Bell, H. and Bell, M. (2011). A Case Study of Post-disaster Damage and Needs Assessment (DANA) in Vietnam: Disaster damages and losses cannot be wholly eliminated, and it is essential that communities develop strategies to effectively respond when disaster strikes. Accurate accounting of damage and needs following a disaster can help responders to match existing needs with available resources and assets. The goal of this study was to determine the accuracy and completeness of existing damages and needs assessment (DANA) procedures in Vietnam. Evaluations were made based on a review of available DANA records at the central and provincial government levels, as well as on information collected through semi-structured interviews with provincial representatives. Provincial level data were collected in five study provinces: Danang, Quang Binh, Quang Nam, Quang Tri, and Thua Thien-Hue. Results indicated inconsistent DANA templates, procedures, and application, Recommendations included 1) Development of a consistent DANA policy; 2) Adoption of a standardized methodology for DANA data collection and reporting and 3) Development and implementation for standardized DANA training.

Rambonilaza, T. et. al. (2011). Landowner's Perception of Flood Risk and Preventive Actions in Estuarine Environment: Within Europe, flood and coastal risk management was undergoing a major paradigm shift as it moves from an approach dominated by investment in flood defence and control infrastructure to another one in which non-structural measures are favoured. One research challenge consisted in developing a better understanding of local population risk perception and its effects on prevention and preparedness actions in order to improve social acceptability of adaptive flood risk management. Landowners' involvement in wetland management offer benefits beyond the line of their property. Accordingly, the purpose of this study was to achieve an empirical understanding of risk perception

and self-protective behaviour among the landowners of the riparian marshes in the Gironde Estuary, in France. Application of the psychometric approach describes that flood risk perception among landowners can be characterised by three synthetic variables that intimated on the degree of exposure, the sense of control and knowledge of the risk. Examining the relationships between these perceived risk dimensions and landowners' participation in water structures management provided three profiles of self-protective behaviour distinguishing "vulnerable", "autonomous", and "passive" individuals. Finally, implications of our findings for the management of flood risk in estuarine environment which is often drained areas were discussed.

Kurt A. et.al. (2010). Community based Flood Mitigation and Preparedness Project at Combodia: The primary natural disasters in Cambodia are floods, droughts, and fires. Cambodia is particularly susceptible to flooding along two major watersheds, the Mekong River and Tonle Sap. The Mekong River bisects the eastern third of the country from north to south and annually causes the Tonle Sap River to reverse course, wiped out the Tonle Sap communities and affecting the far northwestern regions of the country. Farmers depend on the surplus waters for rice cultivation and secondary crops and have implemented extensive water management systems to trap and store the water. But in years of extreme flooding, the high waters could wash away dams, dikes and distribution structures, destroy crops and livestock, damage homes, places of worship, schools, clinics, roads and other community infrastructure and also cause loss of human life. The objectives of this project were to develop a range of practical, low cost, Community Based Preparedness and Mitigation strategies using an integrated community based approach to identify flood related development needs, established a sustainable institutional framework for identifying and implementing those strategies during and after the demonstration project, identified sustainable sources of funds (international, national and community resources) that support Community-Based Preparedness and mitigation and can be applied at the village level in flood-prone communities. Some of the findings of this project were 23 communities had developed flood mitigation and preparedness activities, solutions impacted 5,496 households in the project area, 159 CRCVs had completed either Phase I and/or Phase II training in CBDMP, 8 international NGOs had been mobilized to fund Community-Based Proposals. In addition, based on the

project's success, CRC decided to extend CBDP training to 7 new target provinces in 2001 showing in-country commitment to replicate the methodology.

Doocy, S. et.al. (2010). the human impact of floods: An ancient overview of events 1980-2009:

A historical database of significant floods occurring from 1980 to 2009 was created from publicly available data. A number of data sources were sought to ensure a complete listing of events, to allow for both human and geophysical factors to be included, and to facilitate cross checking of information between sources. The following criteria must be fulfilled: 10 or more people killed or injured; 100 people affected; declaration of a state of emergency; or a call for international assistance. The DFO database provides an extensive list of flood events recorded by governmental, news, instrumental, and remote sensing sources from 1985 to 2009. Inclusion criteria were: significant damage to structures or agriculture, long intervals since the last similar event, or fatalities. Flooding specifically related to hurricane storm surge and tsunamis were not added. Overall, an average of 131 floods affected human populations annually with the majority (81%) occurred during or after the 1990s. Part of this increase can be explained by improved reporting and by the DFO reporting beginning in 1985. While the frequency of flood events increased gradually over time, their impacts on human populations in terms of mortality and affected populations varied greatly between years and were often concentrated around large-scale events. Using the WHO regions the Americas (AMRO) and Western Pacific (WPRO) regions experienced the most flooding events while the fewest were reported in Europe. Deaths were overwhelmingly concentrated in South East Asia (SEARO), which accounted for 69% of global flood mortality, though both the Americas (AMRO) and Western Pacific (WPRO) had significant minorities of flood fatalities. The great majority of the flood affected population was in WPRO (59%) and SEARO (35%) of the global total. Overall, the human impacts of floods in Europe, Africa, and the Eastern Mediterranean regions were limited; together the regions accounted for no more than 8% of flood deaths and 4% flood affected populations, respectively. An estimated 2.8 billion people were reported to be affected by flood events between 1980 and 2009, including nearly 4.6 million rendered homeless. However, these figures likely substantially underestimate the true impact of floods on human

populations because estimates of the total affected population and the homeless population were reported in only 64.3% (n=2,632) and 14.9% (n=611) of events, respectively. The distribution of the number affected was highly skewed with mean and median affected populations of 1,071,829 and 6,000 per event, respectively, which indicates that the median affected population may better reflect the effect of a typical flood event. When mortality data from the two sources were combined, deaths were reported in 96.8% (n=3,960) of floods since 1980. This figure excludes 13.9% of floods where no information on mortality was reported; if no deaths are presumed and these events are included, deaths occurred in 65.3% (n=2,673) of floods. 539,811 deaths (range: 510,941-568,680) resulting from flood events were reported. For floods where mortality was noted down, there was a median of 9 (mean=135; range 0-138,000) deaths per event when using the highest reported death toll. Mortality exceeded 10,000 in only 4 events and 100,000 in two. The two devastating events occurred in Bangladesh (138,000 deaths in 1991) and Myanmar (100,000 deaths in 2008). Injuries were reported in 401 (9.8%) events, where a total of 361,974 injuries were documented. In events where injuries were reported, there was a median of 12.5 (mean=904: range 1-249,378) per flood event. To estimate the total number of injuries due to flood events, it was presumed that injuries would occur in events where deaths were reported. There were 2,673 fatalities due to floods but only 401 (9.8%) with injuries reported. When the median and mean for injuries were applied to the remaining 3,077 events, it was estimated that between 38,463 and 2,717,681 additional unreported flood related injuries may have occurred between 1980 and 2009. In the past 30 years approximately 2.8 billion people have been affected by floods with 4.5 million left homeless, at approximately 540,000 deaths and 360,000 injuries, excluding an estimated 38,000 to 2.7 million injuries that went unrecorded. While the mortality estimate presented in this study is consistent with the range of estimates presented in other studies approximations of numbers injured and displaced are likely gross underestimates of the true values given the infrequency with which figures are reported. Floods events with high levels of mortality are relatively rare: despite their increasing frequency, there were only four events with >10,000 deaths and 58 events with >1000 deaths between 1977 and 2009. A slight reduce in the average number of fatalities per event was observed which is in keeping with broader natural disaster trends that show an increase in the size of the affected population and a decrease in the average number of deaths per event. Higher numbers of fatalities

were reported in flash floods than river floods, however, river floods affected larger populations and land areas. Lower mortality rates in river floods can mostly be attributed to their slower onset allowing for longer time for warning and evacuation. The major use of effective early warning methods for hydrological events has likely contributed to reduce flood mortality. Findings from the historical event review were consistent with previous observations that flood mortality varies by region, economic development level, and the severity of the event. The majority of flood-related deaths are seen in less developed and heavily populated countries, with Southeast Asia and the Western Pacific region experiencing the highest risk of flood-related deaths. Flood mortality rates are relatively similar across continents, but Asian floods kill and affect more people because they affect substantially larger areas with larger populations. At the country level, lower GDP per capita was channelize to higher mortality, which is in keeping with the established relationship between poverty and increased disaster risk. Human and social vulnerabilities and inequalities, urbanization, population density, terrain and geo-physical characteristics and variation in the frequency and precipitating causes of floods by region are also factors that contribute flood risk levels. Temporal changes and development trends have also contributed to changing influences of some of these factors over time. Economic development increases the risk of disaster-related economic losses however improved emergency preparedness, response, and coping capacity may reduce disaster vulnerability. The countries with greater resources are able to better predict and respond to impending flood events suggests that building systems and capacity to detect and respond to floods in less developed countries should be a priority.

Brien and Ross. (2010). Temporary Network Development Capability in High Velocity Environments: A Dynamic Capability Study of Disaster Relief Organizations". Organizations involved in crisis relief after a natural disaster face the multifaceted challenge of significantly changing needs of their various stakeholders, limited, ambiguous and even incorrect information, and highly compressed time limitations. Yet the performance of this organization in these high velocity environments was critical for the lives and welfare of disaster victims. This research suggested the relief organizations that possess a dynamic capability to proactively form temporary networks are better suited to respond to crises. Further, the study identified antecedents of such a temporary network development capability (TNDC),

specifically prior network experience, swift trust, prior crisis experience, a generalist strategy, organizational humility, minimal political behaviour, reputation and legitimacy. In addition, the study demonstrated the relationship between TNDC and organizational performance, along with the moderating impact of factors in the external environment and internal resource availability on this direct relationship. Building on the foundation of extant literature in the areas of inter organizational networks and dynamic capabilities, the study begins with a qualitative analysis to develop a theory to support TNDC. Semi-structured interviews were conducted with relief organizations in the US Gulf Coast after Hurricane Katrina and in Banda Aceh, Indonesia after the Asian Tsunami. Interview responses were coded to develop a model which could be further analysed. From the extant literature and results of the qualitative study, a survey instrument was developed to measure the relationship between various antecedent factors and TNDC, as well as between TNDC and organizational performance. The pilot study ensured reliability and validity and then submitted to relief organizations involved in disaster relief activities to evaluate the nature of the hypothesized relationships.

Karneels, T. & Thinda, (2009). Community Based Hazard and Vulnerability Risk Assessment: A case study in Lusaka informal settlement, city of Tshwane: The study focused on an explorative and descriptive objective. Research as it seemed to explore risk profile of Lusaka informal settlement through community participation. The aim of this research was to conduct a hazard and vulnerability & study used community-based approach in Lusaka informal settlement within the City of Tshwane. The main objectives of this research were to gather all available information on identified hazards and the assessment of the community vulnerabilities and its capacity to cope or deal with these hazards in Lusaka informal settlement and to use this information to perform a hazard and vulnerability assessment and the development of community based disaster risk management framework using the community approach. Some other specific objectives were to determine what community based disaster management was, compared the traditional and CBDRM approach in conducting hazard and vulnerability assessments, determined and explore the advantages of community based disaster risk management, described and explored the importance of Community-Based Disaster risk management and hazard & vulnerability risk assessment, explored the coping strategies and risk reduction

measures implemented in Lusaka, made the results of the research available to the COT so that existing strategies and implementation measures may be assessed and/modified/or re-enforced and Recommendations on the implementation of community-based disaster risk management approach in Lusaka. The findings of this study were more women residing in Lusaka and in terms of disasters they would suffer more due to employment and poverty. Having an average families residing in Lusaka show that the area was growing and that more disaster management activities should be introduced since a number of children would increase. It was also clear that the average age of 35 can be able to deal with the disaster situation since there were less elders and disabled people. Flood was the most prevalent natural hazard in the city of Thwane. Young people would be encouraged to go to school and through the intervention and coordination of COT Disaster Management Centre, department of Education can intervene by increasing access to free education. The parents did not encourage kids to go to school, therefore; the study would also advise the COT departments to bring community programmes within Lusaka settlement. Through the establishment of community structures such as disaster management ward committees, community policing forums, Youth social development forums, and etc. would assist in building the community of Lusaka. The community of Lusaka could be educated about their dangers and vulnerabilities through recommendations made out of this research. If the COT DMC can implement this research recommendation properly, they could have a resilient and sustainable community. Through the development and approval of the suggested recommendations, COT could at the same time reduce the complaints regarding service delivery issues. The respondents had less knowledge concerning problems that poses threats in the community. It was again clear that Disaster management centre need to intervene as soon as possible.

Zaalberg, R. et.al., (2009). Prevention, Adaptation, and Threat Denial: Flooding Experiences in the Netherlands: Delta areas such as the Netherlands were more and more at risk of future flooding due to global climate change. Motivating residents living in flood-prone areas to effectively cope with local floods may lead to minimization of material losses and loss of life. The aim of this research was to investigate whether the extent to which residents had been exposed to flooding in the past was a key factor in motivating residents to effectively cope with future flooding. We also focused on the psychological variables that mediated this relationship. We

conducted a survey (N = 516) among flood victims and non-victims. We assessed subjective experiences due to past flooding, affective and cognitive appraisals, and coping responses. Results show that victims reported stronger emotions (negative and positive), and the receipt of more social support due to past flooding than did non-victims. Moreover, victims worry more about future flooding, perceive themselves as more vulnerable to future flooding, perceive the consequences of future flooding as more severe, and had stronger intentions to take adaptive actions in the future than non-victims. Structural equation modelling revealed that the latter effect was fully mediated by specific experiences and appraisals. Insights into factors and processes that had the potential to motivate residents to effectively cope with future floods might prove helpful in developing interventions to inform residents how to act effectively in case of an imminent flood.

Guerdan, B. R. (2009). Disaster Preparedness and Disaster Management: The Development and Exploration of a Self-Assessment Survey to judge the competency of Community-based Physician Knowledge: Disaster preparedness and disaster management have been given a high level of attention in the aftermath of the United States' recent experience with both natural and manmade events. Primary care physicians were often forced to respond with little or no formal training. Physicians in training received little to no education on this subject. The capabilities of these professionals had significant public health relevance in both general public health as well as disaster preparedness and disaster management. There were several organizations and academic institutions that had made inroads into training on this subject. There was no standardized assessment tool to judge these clinicians' competency. Currently available training and some of the major response organizations were reviewed. A format for the development of an assessment tool and a pilot survey completed at two community hospitals were both discussed. The pilot study revealed that only 25% of the respondents of the two medical staffs had had any disaster medicine training in the past two years. In general, the self-assessment scores disclosed a low level of adequacy as judged by the respondents. The median score on the self-assessment questions was 4.9/10 while the mode was 4.6/10. The range was 3.5 to 8.1. 95% confidence intervals were calculated and were very similar. The study also contrasted the two geographically distinct medical staffs regarding their beliefs about disaster response and a self-assessment of their competency in several

components of disaster medicine. The medical staff at Hospital A had a younger, less experienced, more diverse (both type of residency and gender) staff. The respondents from Hospital A also reported less training and experience in disaster medicine than their Florida counterparts at Hospital B. There was also a significant difference in attitudes involving required training. One hundred percent of the physicians in the Florida sample felt that disaster medicine training should be a requirement for licensure, while only thirty-six percent of the Pennsylvania sample felt this should be a licensure requirement. The self-assessment questions revealed varying numerical outcomes. The results from Hospital B (FL) were almost uniformly 1.4-2.5 times higher than Hospital A (PA). The average for question #16 (clinical assessment and treatment) had very similar results at both facilities (8.6/10 vs. 7.8/10).

Miceli, R., Sotgiu, I. and Settanni. M. (2008). Disaster Preparedness and Perception of Flood Risk: Italy is a country which is highly vulnerable to floods and landslides. The present study aims to investigate disaster preparedness and perception of flood risk in a group of people living in an Alpine valley in the north of Italy. Four hundred seven adult residents in nine communities exposed to hydro geological risk were interviewed by using a structured questionnaire. Participants were asked about the adoption of a set of protective behaviors that can prevent negative consequences of floods. Perception of flood risk was assessed by means of a one-dimensional scale that was developed and validated by the authors. Items included in this scale asked participants to estimate likelihood of occurrence of different flood consequences and to express feelings of worry associated to them. Socio-demographic and experiential information on respondents were also collected. Overall, results showed that most of respondents were fairly well prepared to deal with a future flood disaster. Correlation and regression analyses indicated that disaster preparedness was positively associated with risk perception. In accordance with literature, there was not a significant relation between likelihood judgments and adoption of protective behaviors, while feelings of worry were associated with disaster preparedness. Authors interpret their results in relation to the socio-environmental characteristics of the studied communities. Theoretical, empirical and practical implications of the findings were also discussed.

Kapucu (2008). Collaborative Emergency Management: Better Community Organising, Better Public Preparedness and Response: This study examined the

determinants of willingness to participate in a Community-Based Disaster Preparedness Scheme. The theory of reasoned action (Ajzen & Fishbein, 1977, 1980; Fishbein & Ajzen, 1975) was applied as a basic model and was complemented by the factor of concern about disaster. A structural equation modelling was performed to validate this model. The hypothetical model was supported for the data from the residents (N = 3 036) of an area with a high risk of flood damage. It was cleared that the subjective norm and concern about flood positively contributed to the intention of participating in a Community-Based Disaster Preparedness Scheme. The perceived cost of preparedness was the inhibitory factor of participating in such a scheme.

This study assessed how flood risk perception and home ownership affect preparedness of residents for floods, emphasising specifically on the case of the Tokai flood disaster in Nagoya City, one of Japan's biggest metropolises, in 2000. The greatest rainfall ever recorded in Nagoya City (566.5 mm) occurred on 11–12 September 2000; as a result, a local river burst its banks and flooded the city. A survey was conducted of residents of the affected area in Nagoya City and its adjacent region. The respondents were asked to rate the extent of their experience with, anticipation of, and preparedness for floods before and after the Tokai disaster in terms of taking special measures against floods. The results revealed that the degree of preparedness for floods was determined by the level of fear of floods and the amount of damage during the Tokai flood, especially for homeowners. However, preparedness of residents did not depend on their anticipation of floods. These findings depicted that preparedness for floods depends on fear of flooding, ownership of a home, and the amount of damage from previous floods rather than on previous experience with and anticipation of floods.

Chapman & Arbon, (2008). Studied that disaster preparedness in the acute setting. The impact of disasters is believed to be increasing internationally, and nurses were more likely to be confronted with a need to provide nursing care to victims affected by disaster. The evidence-base of disaster health in the acute setting was very limited, both in Australia and internationally. This review identified key themes and issues identified in recent disaster healthcare research literature. Four major themes that most frequently featured in disaster health research were identified. These comprised nurse education in disaster response; nurse (including students) concerns, issues,

attitudes and perceived preparedness for disaster response; disaster planning in acute settings; and surge capacities of acute settings. Disaster events, both natural and man-made have become of increasing concern to health care workers, particularly nurses. Research highlighted that education in disaster response, disaster plans and surge capacity are generally not well implemented or standardized in the acute setting. While research identified gaps in disaster preparedness in Australian and international acute settings, it was difficult to make clear recommendations for improvement without further, more focused research.

Sasmita Misha (2007). "Do lesson people learn determine disaster cognition and preparedness? The aim of the study was to examine whether the disaster experience and education through risk perception initiate flood and heat wave preparedness. For this study data was collected from 100 people from the flood and heat wave affected areas in Orissa. The finding revealed that people with disaster experience and education were prepared to face flood and heat wave. It was also found that more the disaster experience and education more they perceive the risk of flood and heat wave. The findings found to be the mediator between disaster experience, disaster education and flood preparedness.

UNISDR (UN International Strategy for Disaster Reduction), (2007). Gender Perspective: working together for Disaster Risk Reduction Good Practices and Lessons Learned: This report presented a collection of 15 practices that advance gendered resilience building--a key principle that informs the implementation of the Hyogo Framework for Action. This study highlighted the fact that disaster recovery and rehabilitation had provided good opportunities for women to play public roles with the support of their families and communities. It also underlined the importance of working with both men and women to promote a gender-balanced approach to disaster risk reduction. Some of the good practices were on awareness-raising and capacity-building, others were on women's participation in and contribution to building safe communities and households and equal access to information. In a nutshell, the publication showcases women's valuable contributions to community resilience.

Williams, Nocera & Casteel, (2007). The objective of this study was to report whether training intervention in disaster preparedness improve knowledge and skills

in disaster response or not. Computer- and lecture-based training interventions may be effective in increasing disaster-related knowledge for out-of-hospital providers, though questions about study design and quality may cast doubt on the results. Evidence about effectiveness of training for in hospital providers is inconclusive. Comparison across studies is difficult because of diversity in study subjects, designs, and interventions. Results are likely biased by contamination from outside events. The available evidence was sufficient to determine that the training interventions for health care providers were effective in improving knowledge and skills in disaster response.

Kurita, et.al. (2006). Tsunami public Awareness and the disaster management system of Sri Lanka: Ina a survey assessed and evaluate the disaster management system and capacity of a local community to respond to natural disasters and to propose a strategy for the dissemination of Tsunami knowledge while raising public awareness of Tsunami disasters. The survey results indicated that 90 percentage of residents lacked Tsunami knowledge prior to the 2004 Tsunami. 30 percent of the school children do not know about the causes of tsunami and 90 percentage of the school children have interest in learning natural disaster but they were not provided with information of disaster. Audio visual means were thought to be the most effective tool for disaster education. Seminar and training on natural disaster were not conducted among general officials other than the military and police, TV and radio broadcasts are effective tools for disseminating disaster warnings to residents. The recommendations for this study were to promote disaster education at the school level implement community level public awareness programme enhance the information management systems and improved coordination mechanisms with in the disaster management system.

Kazuko Tanaka (2006). In the study impact of disaster education on public preparation and mitigation for earthquake did a cross country association between Fukui, Japan and the San Francisco bay Area, California, U.S.A" This study was conducted to draw answers for the following questions in Fukui, Japan and the San Francisco bay area, California, USA. It search answers to most suitable issues like types of education are the most suitable for people to undertake proper activities to get ready for the future earthquake, disaster education enhance people's readiness, In

disaster education possible to motivate people to understand activities and whether the cultural differences indicate different understanding of disaster education. Questionnaire survey was conducted in both seismic areas. The major findings were American respondents show relatively good readiness whereas in Fukui the readiness was slightly higher. In both areas, respondents with disaster education were more ready than respondents without disaster education, but the enhancement was not so significant. Printed materials for American respondents and educational sources for Fukui respondents are effective approaches. The improvement in readiness regarding social activities and educational sources could be achieved through educational information such as awareness of disaster, knowledge about neighbourhood and part earthquake experience various types of disaster education should be readily available at accessible places to the public.

World Meteorological Organization, (2006). A Case Study on Legal and institutional aspects of Integrated Flood Management: The case studies provided in the following chapters have been prepared taking into consideration the broad outlook that the IFM concept provides. They show a clear picture of how the above-mentioned roles of law were reflected in the legal frameworks and practice of states. The case studies reflected how flood related laws have evolved in different societies with differences in climatic conditions, development characteristics, legal systems and traditions as well as socio-political set-up. The three case studies provided a kaleidoscopic insight into this important element of the IFM approach.

The Japanese case study reflected legislative approaches of a country with scarce land resources and highly developed flood plains that are exposed to a multitude of different natural hazards, such as floods, earthquakes, tsunamis, landslides and mudflows; disaster management legislation dates well back into the nineteenth century and extends to legislative action in the twenty-first century. The case study provided an example of legislation that addresses various structural and non-structural flood and disaster management measures, leading to perhaps one of the highest levels of disaster preparedness in the world. The case also reflected the interesting interaction between the occurrence of natural disasters and political action through the legislator.

The case study of Serbia provides valuable insight into legal and institutional arrangements that have emerged within a country that has been undergoing major societal changes in recent decades. The case study brought out the heavy dependence on soft law. It provides a particularly clear account of the diverse institutional arrangements and draws into the picture various types of detrimental effects of waters that the legislative framework on flood management seeks to address. It also accounts for the transboundary dimension of flood management reflected in the bilateral and multilateral agreements with the co-basin states, in a country that shares all of its main river systems with neighbouring states.

The case from Switzerland provided an outstanding synthesis of the legal arrangements that had evolved within a changing policy context, that was earlier determined by a drive to control floods within the process of the country's development, and was shifting towards comprehensive risk management that took into account the accumulation of economic assets on flood plains, environmental sustainability and transboundary cooperation within international river basins. The Federal Law on Flood Control and supplemental Ordinance on Flood Control occupy centre stage in this legal framework for flood management, supported by a number of related federal laws on land-use planning, forests, agriculture, environmental protection, etc. The case from Switzerland was embedded in the realities of the various types of natural hazards affecting the country and a base-democratic political system, where a number of powers had been allocated to lower administrative levels in the context of subsidiary.

Kuwasawa et.al. (2006). The effect of disaster education considering decision making evacuation from Tsunami. Survey was conducted to know about actual situation of residents' evacuation from Tsunami. A prediction model about decision making evacuation from tsunami and research measures to minimize the calamities by tsunami. The calculated casualties by wing tsunami comprehensive scenario simulator under those measures have done. As a result the tsunami disaster consciousness of residents influenced the decision making evacuation from tsunami. It developed many casualties decrease if they urge residents to improve their consciousness by disaster education.

Morotti, (2005). Community-based pandemic preparedness multi-sectorial actions for safer, healthier and more resilient communities brought that within the last decade, there had been growing recognition that community participation is fundamental to disaster risk reduction. National pandemic preparedness plans that had advocated for and support and embrace community based approaches were proving to be more resilient and adaptable. Since 2005, much has been done at the community level to strengthen surveillance and response systems, clearly demonstrating the links between international protocols, local realities and sustainability. While the key findings of this report are highlighted in the document that follows, it was evident that the wealth of experiences and approaches that have been taken during the past decade still requires further investigation. The key findings were National strategies and policies were not enough to prepare for disasters and emergencies, such as a pandemic, but require community participation and consultation, linkages with partners at all levels and operational planning not just at the national level but at and with the community. Communication materials need to be prepared and tested in the local environment to ensure their acceptance and understanding prior to, an emergency or disaster Interventions that target community and households to enhance early detection, early warning and reduce the spread of communicable diseases, such as pandemic influenza, can be harmonized across vertical disease. Preparedness and response programs, contributing to preventing and mitigating against emergencies caused by epidemic/pandemic prone diseases. In order for Community Based Programmes to be sustained long term mechanisms need to be established to ensure commitment at all levels and resources will continue to be available after initial funding has ceased. Lessons Learnt and examples of good practices from community based programmes need to be synthesized into a strategic framework for ongoing sustainability. Programmes that had shown to be the most effective and most sustainable had included partnership participation, empowerment, and ownership of the local communities, all of which were factors that underpin sustainability.

Dominey, D. Howes and Deanne (2004). Tsunami Public Awareness and its role in Risk Education: The 2004 Indian Ocean Tsunami affected in a large magnitude and the destructive Tsunami occurred in areas closure to Australia. Survey method was adopted for this study. A questionnaire was designed to collect data from the general public and coastal council professional officers. The result shown that little

has been learned by the public and coastal council professional officers since the December 2004 Indian Ocean tsunami disaster. To summarize, that the study revealed that whatever the public knew and did not know with respect to Tsunami importantly. The suggested recommendation of the study was to assist responsible organizations in thinking about risk mitigation.

Fothergill & Peek (2004). Poverty and Disasters in the United States synthesizes the literature on poverty and disasters in the United States and presents the results from a wide range of studies conducted over the past twenty years. The findings were organized into eight categories based on the stages of disaster event. The review illustrated how people of different socio-economic status perceived, prepared for and respond to natural hazard risks, how low-income populations may be differentially impacted, both physically and psychologically and how disaster effects vary by social class during the periods of emergency response, recovery and reconstruction. The literature illustrated that the poor in the United State were more vulnerable to natural disasters due to such factors as place and type of residence, building construction, and social exclusion. The results had important implication for social and recommendations for future research and policy implementation.

Shaw R., et.al., (2004). Linking Experience, Education, Perception and Earthquake Preparedness: In this study survey method was adopted to study the awareness and impact of flood, experience and education. The sample taken for the study included 1,065 high school five grade students from five prefectures of Japan. The major finding showed that flood experience was not the prime factor to enhance awareness. School education can provide useful information as the knowledge base for Flood. In school education there were many active ways for disaster education they were through conversation, experiencing and visual aids and they were found to be more effective. The major suggestion was to couple school education with self, family and community education could help a student to develop a "culture of disaster preparedness" which would urge them to take right decision and action when they became adult.

Norris, H., et.al., (2001). Brought out **r**esults of 160 samples of disaster victims were coded as to sample type, disaster type, disaster location, outcomes and risk factors observed, and overall severity of impairment. In order of frequency, outcomes

included specific psychological problems, nonspecific distress, health problems, chronic problems in living, resource loss, and problems specific to youth. Regression analyses showed that samples were more likely to be impaired if they were composed of youth rather than adults, were from developing rather than developed countries, or experienced mass violence (e.g., terrorism, shooting sprees) rather than natural or technological disasters. Most samples of rescue and recovery workers showed remarkable resilience. Within adult samples, more severe exposure, female gender, middle age, ethnic minority status, secondary stressors, prior psychiatric problems, and weak or deteriorating psychosocial resources most consistently increased the likelihood of adverse outcomes. Among youth, family factors were primary. Implications of the research for clinical practice and community intervention are discussed.

Perez, M. and Lugo (2001). The mass media and Disaster awareness in Puerto Rico: A case study of the floods in Barrio Tortugo. It was mentioned that media played a vital in creating awareness on disaster and risk. But in case study of a flood in a rural community in Puerto Rico, this model was inefficient in explaining how disaster awareness was created and how this relates to effective disaster mitigation. The finding suggested that the literature failed to recognize the important factors of vulnerability to hazards. Important factors such as community leaders and the action of other groups and institution that had indirect impact in generating awareness on disaster was neglected.

Fothergill et.al., (1999). Race, Ethnicity and Disasters in the United States in a study synthesized past disaster research that addressed issues of race and ethnicity in the United State. Using an eight-stage typology to organize the findings, this literature reviewed present the results from a wide range of studies. The synthesis showed how various racial and ethnic groups perceived natural hazard risks and responded to warnings, how groups might be differentially affected, both physically and psychologically, and how disaster affected by race and ethnicity during the periods of emergency response, recovery and reconstruction. The study had important findings, many illustrating that racial and ethnic communities in the US were more vulnerable to natural disasters, due to factors such as language, housing patterns, building construction, community isolation and cultural insensitivities. By presenting these

studies together, it can be concluded that patterns of racial and ethnic inequalities that might be more difficult to see or interpreted in individual studies that took place in one specific time and place.

Wolensky R. P. & Wolensky, K.C. (1990). In a study Local Government's Problem with Disaster Management: In response to the recent attention given the disaster management responsibilities of local governments, the study asked two questions: whether local governments managed the demands associated with major natural disasters, and performance patterns observed. In the first part of the paper the social science disaster literature was reviewed to ascertain performance across four disaster stages (Pre-Disaster Planning, Emergency, Early Recovery, and Long-term Recovery). Among the explanations offered for the performance patterns, it was surprising to find little attention devoted to underlying structural factors. In the second part of the paper, "the disaster management problem" was stipulated and a structural analysis of it is undertaken, focusing on the role of local government within both the intergovernmental system and the local power structure. The conclusion was that the disaster management problem has roots deep within American society and culture, and any attempted to redress the problem would require attention to limiting structural realities.

Summary: An analysis in the area of Disaster Management revealed that studies in India have been conducted in Urban and Rural communities. Researches have brought out the needs for special assistance to women and children post disasters. Studies on training of school children and VDMC members revealed that much more can be leveraged if there is interface between Government and Community.

Capacity Building of the community members through training is also recommended as an outcome of the studies. Training manual for Disaster Management has been found to be useful to positively influence preparedness. Role of plantations like mangroves, use of local indigenous knowledge have found to be useful as it comes out in the studies. Research studies have also brought out the need to use Geographical Information System (GIS) & High resolution terrain data to help aid in preparation for Disasters. This will help prevent damage done by disasters. Disaster Reduction is also accepted as a prime condition for Sustainable Development and Community Empowerment.

Training of community to face disaster has been found to be the need of hour. However, studies bring out that Government, Non-Governmental Organization and International organization are successful in eliciting participation during the project period which gradually diminish over a period of time. Studies have also recommended storing of emergency supplies and for disaster preparedness and counselling and guidance as part of rehabilitation.

International studies focus on initiatives taken by Government of Bangladesh, Philippines, Indonesia, and Global South.

Most of the studies focuses on severe impact of Flood on Community disaster. Studies have also brought out perspective of disaster medicine and public health preparedness.

The National and International studies focuses on some local level awareness and preparedness. It has been mentioned in these studies that with the local level preparedness the damage and vulnerability can be reduced. The respondents of these studies were health professionals, school children, and community at large.

The current study assesses disaster awareness and preparedness with regard to Community Based Disaster Preparedness by Village Level Disaster Management Committee for flood.