

**IMPLICATIONS OF RECURRENT FLOODS ON LIVELIHOOD:  
AN ANALYSIS OF STATE RESPONSE IN FLOOD PRONE AREAS  
OF SIDDHARTHA NAGAR DISTRICT**

*Thesis submitted to Jawaharlal Nehru University in fulfillment of the  
requirement for the award of the degree of*

**Doctor of Philosophy**

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**CERTIFICATE**

It is, hereby, certified that the thesis entitled “**Implications of Recurrent Floods on Livelihood: An Analysis of State Response in Flood Prone Areas of Siddhartha Nagar District**” submitted to Jawaharlal Nehru University, New Delhi in fulfillment of the requirement for the degree of **Doctor of Philosophy** in **Centre of Social Medicine and Community Health**, is a record of bonafide research work carried out by me under the supervision of **Dr. Sunita Reddy**. This thesis has not been submitted for any other degree of this University or any other University and is my original work.


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*Shishir Kumar Yadav*

## LIST OF ABBREVIATIONS

<b>ANM</b>	Auxiliary Nursing and Midwife
<b>APL</b>	Above Poverty Line
<b>ASHA</b>	Accredited Social Health Activist
<b>BPL</b>	Below Poverty Line
<b>CHC</b>	Community Health Centre
<b>DDMA</b>	District Disaster Management Authority
<b>DDMA</b>	District Disaster Management Authority
<b>DFID</b>	Department for International Development
<b>DRR</b>	Disaster Risk Reduction
<b>FAO</b>	Food and Agricultural Organization
<b>ICDS</b>	Integrated Child Development Services
<b>IMF</b>	International Monetary Fund
<b>MNREGA</b>	Mahatma Gandhi Rural Employment Guarantee Act
<b>NDMA</b>	National Disaster Management Authority
<b>NDMP</b>	National Disaster Management Plan
<b>NDRF</b>	National Disaster Response Force
<b>NFSS</b>	National Food Security Scheme
<b>NGO</b>	Non Government Organisation
<b>NIDM</b>	National Institute of Disaster Management



<b>NRLM</b>	National Rural Livelihood Mission
<b>OPD</b>	Outpatient Department
<b>PHC</b>	Primary Health Centre
<b>SDM</b>	Sub District Magistrate
<b>SDMA</b>	State Disaster Management Authority
<b>SDMC</b>	SAARC Disaster Management Center
<b>SEC</b>	State Executive Committee
<b>SLA</b>	Sustainable Livelihood Approach
<b>UNDP</b>	United Nations Development Programme
<b>UNICEF</b>	United Nations International Children's Emergency Fund
<b>UNISDR</b>	United Nations Office for International Disaster Risk Reduction
<b>UP</b>	Uttar Pradesh
<b>WCDRR</b>	World Conference on Disaster Risk (WCDRR)
<b>WHO</b>	World Health Organisation

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## **CHAPTER -1**

### **INTRODUCTION**

The world that we inhabit is vulnerable to disasters of all kinds. The management of life threatening disasters has been a concern that can be found across the board in all countries. With the increasing number of lives claimed in disasters, it has become one of the major public health issues. The Bhuj earthquake 2001, Asian Tsunami in Indian Ocean in 2004, the Uttarakhand Flash floods in 2012, the Nepal earthquake 2015 and the Chennai Floods in 2015 have time and again brought the harsh truth of the vulnerability of human societies and settlements to these hazards and disasters in India and the world. It becomes a matter of grave concern that the frequency of disasters with each passing year is going to increase and not slow down. The increase in the population densities, the development of toxic and hazardous materials every year, rapid industrialization and urbanisation changing the landscape indicate at the probability of increasing vulnerability of the societies to the disasters (Noji, 1997). There is an increasing pressure on people now, more than ever, to find means and ways to define and articulate disaster in terms of definitions and perceptions, secure better information and prevent and control massive losses.

The situation in India with regard to the frequency of disaster makes it one of the highly disaster prone regions in the world. Because of the unique geo- climatic condition India has been traditionally vulnerable to a number of disasters like floods, droughts, cyclones, earthquakes and landslides. The underdevelopment of social and economic structures in the country has contributed to the increased vulnerability of the people in the country. One can gauge the massive threat of disaster from the fact that 60% of the landmass in the county is prone to earthquakes of different intensity; more than 40 million hectares is vulnerable to floods; cyclones pose a threat of 8% of the total area and 68% of total landmass is susceptible to drought in the country (Ministry of Home affairs 2011). The large population in the country, high number of people under poverty, poor social and economic infrastructure and rapidly changing landscape have led to the immense vulnerability of the people to disasters. This puts India as one of the

major countries in the world in terms of the total figures of people affected by disaster in the world.

To venture into any understanding of disaster would require a definition of the disaster in the first place. A definition of disaster clarifies for a researcher the field of study and further helps in explanation, prediction and control of disaster. It is an accepted notion that disaster has many definitions and these definitions vary among different people (Parusuraman 2013, Perry 2007). Perry distinguishes between a citizen or a sufferer's definition of a disaster from a social scientist's definition of disaster as the latter is concerned with purposes of research and theory (Perry, 2013:1). Historically, the idea of disaster has evolved from being an 'act of god' to an 'act of man'. Disasters, when seen as 'act of god' or 'wrath of nature', were perceived as uncontrollable events brought about by external forces that cannot be managed and controlled. In the 1950s, this was the common theme in the disaster definitions where the source of the disaster was traced as nature which was out of control of human beings and the latter were only the victims of the unruly nature (Oliver, 2001).

In the 1980s, the understanding of disaster began to change to the idea that the causes and consequences of the disaster can be seen in lieu of the social and temporal context (Perry, 2007). The disasters were now studied as events that are observable in time and space. It brought to the forefront the idea that different societies were differently impacted from a similar destructive agent. The state of infrastructure, social structures and hierarchies and the capacity of management of disasters are crucial in deciding the vulnerability of the society to disasters. The societies that are underdeveloped and lack infrastructure were more vulnerable to massive destruction in a disaster as compared to societies and regions that are developed and enjoy basic facilities. Susan Cutter (2005) has argued that instead of asking the question what is a disaster, one must ask '*what makes people and places vulnerable (and resilient) to environmental threats and unexpected events*'? She argues that in the 'modern system', the multiplicity of the risks induced from a range of factors like interventions of human and natural societies, unsustainable social practices and human induced threats like terrorism etc have led to the building of a 'global risk society' where the nature of the risk varies across places and social groups. Cutter argues, "The reflexive nature of the

risk society (influences risk production and is influenced by risks) suggests a need to move away from analyses (and control strategies) based on singular events with proximate causes (somewhat akin to a simple cause and effect model) toward a more dynamical understanding of the global interdependence of human, natural, and technological system” (Cutter, 2005: 42).

The disaster consists of not just the actual destructive agent, that is a part of natural, modified and constructed ecosystem, but also a human population embedded in a social system (Smith & Hoffman, 2001). The concomitance of these two elements makes up what is called a disaster. The existing patterns of vulnerabilities in a social system in terms of location, geography, structures and institutions decide the overall vulnerability and threat from the disaster. It is in this sense that one can argue that the study of disaster and disaster management is not just a mechanical- technical study but involves an active analysis of human societies, their structures and perceptions. The study of the effect of disaster goes beyond numerical calculations of loss of lives and material. It analyses the impact on human society with regard to the changes in the pattern of economic production, social and cultural structures, infrastructure, behavior and perception of the people. An anthropological study of disasters helps in understanding an extensive process of disaster that is located within a social context (ibid).

The common conception of understanding disaster has been to perceive it as an ‘event’, a kind of disruption. The underlying notion of disaster is that it is something that is away from the routine. It destructs and breaks the everyday lives of the people. It sends them into shock and surprise because of the sudden-ness and uncertainty around the event of disaster. The dominant definitions and conceptions of disaster follow this understanding of disaster as a disruptive force. However, recurrent disasters or seasonal disasters defy this understanding (Yadav, 2014). Recurrent disasters are as destructive as sudden or flash disasters. They do not shock or surprise because the seasonality of their occurrence makes them certain. The society that is affected by recurrent disaster is not disrupted from their routine rather the disaster itself has become part of their yearly routine. Yet, this does not prevent the disaster or mitigate its impact. Rather, the recurrent disaster leads to an alternative routine which people have adopted for dealing

with disaster. The recurrent disaster comes to define and alter the everyday routine according to its impact (ibid). This puts the entire population affected by recurrent disaster vulnerable in ways different from that of sudden disaster. Recurrent flood in India is one such recurrent disaster that may not emerge as a public spectacle yet claims massive impact on the people.

The recurrent floods are the most devastating disaster faced by India. It occurs because of the excessive rainfall during the monsoon season, which is due to overflow of water from rivers and other water bodies in the adjacent land areas. A river or stream breaks out from its natural or artificial bank due to heavy increase in the flow of water and runs into adjoining areas. Human factors like pressure from over population, deforestation, urbanization, easy accessibility of land in low line areas and lack of flood control majors also lead to recurrent floods in the country. According to the Rashtriya Barh Ayog (National Commission on Flood), the area prone to floods in India is 40.0 million hectares (Ministry of Water Resources, 2009). Roughly, 30.0 million people in the country are affected and more than 1500 lives lost each year. Assam, Uttar Pradesh and Bihar are among flood prone states in the country (Jain et al., 2007). Recurrent floods, unlike the flash floods, are predictable and foreseeable with the seasonal changes happening around the year. India faces floods primarily in the monsoon period which lasts from June to August. However, the issue of recurrent floods also faces the same fate as other calamities for it has to bear the undifferentiated outlook of an understanding of disaster which is deemed as sudden and shocking. There is a strong need to devise more inclusive definition of disaster which can incorporate the differences and distinctness of recurrent floods from sudden disruptions.

## **1.1- Multiple Dimensions of the Impact of Recurrent Floods**

### **1.1.1- Livelihood of People**

To understand the distinctness of recurrent floods from sudden disaster, the impact has to be understood from multiple dimensions. One of the major implications of disaster is on the livelihood of the people. Although the dominant conception of livelihood is to perceive it in lieu of poverty eradication, the importance of livelihood studies in disaster cannot be undermined. The recurrent floods have a massive impact on the affected

region. The immediate consequences of floods are displacement of people, the destruction of infrastructure such as houses, roads etc, and damage to crops and loss of cattle and livestock (Theron, 2007). In rural areas, floods have severe implications on the state of agriculture. Agriculture is one of the dominant sources of livelihood in rural areas. The recurrence not just destroys the agricultural production but also alters the pattern of agriculture significantly. The livelihood therefore emerges as an important theme in disaster studies. The context of recurrent floods offers interesting insights and challenges to the programs of livelihood generation and development.

The conception of livelihood that is employed in the work is adopted from the Sustainable Livelihood Model offered by the Department for International Development (DFID) in the 1990s. A hallmark of the livelihood approach in this model is its emphasis on the capabilities of the inhabitants based on productive activities (those that generate cash and non-cash income-activities such as agriculture, wage labor, or craft production and generate potentially tradable goods and services) and reproductive activities (those that perpetuate the survival of the productive unit i.e., household maintenance functions such as childcare, cooking and cleaning). The key to sustainable development lies in capitalizing on the effective use of different types of capital (financial, physical, natural, social and human) and different livelihood strategies for sustenance during disasters such as floods or droughts (DFID, 1997). And a livelihood is said to be sustainable, when it has the potential to cope with, and recover from, stresses and shocks and maintain or enhance its assets and capabilities while not undermining the existing resource base.

### **1.1.2- Social Vulnerability of People**

The second theme in understanding the impact of recurrent floods has to do with the social vulnerability of the affected people. The social context, in terms of the social hierarchies, structures and customs in the society, also enhances the understanding of vulnerability from recurrent floods. The man-made hierarchies with regard to caste, class and gender in the society decides the vulnerability of the people. People are differentially impacted from a disaster based on their location in the society. In the scenario of recurrent floods which occur every year, the social vulnerability of the



people emerges as an interesting context to understand the differential impact of floods. It has been sufficiently argued by several scholars that disasters impact different sections of the society differently. It becomes crucial to know the situation of people belonging to different sections in the case of recurrent floods. An important approach, used in this work, which underscores the spatial dimensions of social and economic stratification in increasing the susceptibility to hazards due to disasters, is the social vulnerability approach (Hewitt, 1998). According to the 'social vulnerability' paradigm, pre-disasters social cultural configuration such as caste, class, gender, etc. are an important predictor of hazards due to the disasters. It relates to differences in gender, age, social position, incomes, and other potential elements that influence the predisposition to hazards and ability to cope with adverse impact.

### **1.1.3- Role of the State**

This brings us to the question of the role of state in preventing, controlling and mitigating a disaster. In India, Disaster Management Act (2005) provides for the effective management of disasters in the country. It recommends institutional mechanisms for drawing up and monitoring the implementation of the disaster management. The Act also ensures measures by the various wings of the Government for prevention and mitigation of disasters and prompts response to any disaster situation in the country. After disaster management act 2005, India also follows the disaster management continuums which are widely used in world scenario. This is a cyclic process to prevent the disasters in the country. The process has response, recovery, prevention and mitigation and then preparedness. The Act provides for setting up of a three tier hierarchical the National Disaster Management Authority (NDMA) under the Chairmanship of the Prime Minister, the State Disaster Management Authorities (SDMA) under the Chairmanship of the Chief Ministers, and the District Disaster Management Authorities (DDMAs) under the Chairmanship of Collectors/District Magistrates/Deputy Commissioners. The Act further provides for the constitution of different Executive Committees at national and state levels. Under its aegis, the National Institute of Disaster Management (NIDM) for capacity building and National Disaster Response Force (NDRF) for response purpose have been set up. It also

mandates the concerned Ministries and Departments to draw up their own plans in accordance with the National Plan. The Act also had mandates for financial provisions for the creation of funds for response, National Disaster Mitigation Fund and similar funds at the state and district levels for the purpose of disaster management. The Act also provides specific roles to local bodies in disaster management. With the enactment of the 73<sup>rd</sup> and 74<sup>th</sup> amendments in the constitution and emergence of local self-government, both rural and urban, as important tiers of governance, the role of local authorities has become very important.

An important aspect of the present study is to look into the planning and policy making mechanism of the government authority. The role of the government organisations in the prevention, control and mitigation of disaster is well recognised. It is important to critically analyse the functioning of various departments in their management of disasters in the country. As mentioned earlier, disaster is seen as a phenomenon that can be controlled through appropriate mechanisms put in place. It is crucial to know what the loopholes are in the plans and at the implementation level to fully grasp the situation of recurrent disasters in the country.

At the international level, the global world community is now emerging as a significant player in influencing the planning and policy making of independent countries to reduce disaster risk and mitigate the impact of disasters in various countries. The world conferences organize brain churning sessions to derive a consensus at a framework that holds universal validity. The World Conference on Disaster Risk Reduction (WCDRR) held in Japan is one such conference that has produced frameworks for ten years to be implemented by signatory countries. Hyogo Framework was implemented from 2005 to 2015. Presently, the Sendai Framework has been launched and promoted by the international community as the new framework for implementation from 2015 to 2030. India is a signatory to the Sendai Framework (NDMP 2016). This Framework is a fresh take on the guidelines for prevention and mitigation of disaster and risk reduction. It expands the ambit of the definitional aspect of disaster to include small -scale and large -scale, frequent and infrequent, sudden and slow -onset disasters, caused by natural or manmade hazards as well as related environmental, technological and biological

hazards and risks. On the issue of the concerns of the people during and after a disaster, it proposes to treat differently various stakeholders women, children and youth, persons with disabilities, poor people, migrants, indigenous peoples, volunteers, the community of practitioners and older persons in the design and implementation of policies, plans and standards. It emphasises the concern of livelihood loss after a disaster strongly with a wider notion of livelihood. Sendai Framework raises the importance of not just physical but economic, physical, social, cultural and environmental assets for people and communities and ensures their protection in policy and programs. It argues for greater involvement of the relevant stakeholders with the government and civil society organisations for a mutual sharing of knowledge in designing of the strategies. In 2016 India developed the National Disaster Management Plan (NDMP) on the lines of Sendai Framework. It adopted the major themes and recommendations of the Sendai framework for Disaster Risk Reduction. This work seeks to analyse the plan document and preempt some of the challenges that the field offers. It looks at the major themes in the document and the perceptions from the field on those themes.

## **1.2- Selected Field for Study**

The field that is selected for the study of recurrent floods is that of Uttar Pradesh and the district of Siddhartha Nagar. The districts in Uttar Pradesh that fall in the Terai region are prone to floods. The rivers, Ghaghra, Rapti, Rohni, Anmi, Sharda, Gomti, Tons, Sai, Narayna and Ganga, are the major sources of floods in the monsoon region. Also the outpouring of the rivers from Nepal also increases the water flow in the rivers especially in Eastern Uttar Pradesh. In 2011, thirty- six districts were under the impact of floods incurring a loss of 1438.44 crores and in 2014, twenty- two districts were flooded which led to a loss of 754.32 crores. The year 2013 saw an excessive increase in the losses incurred in floods when forty districts of the state were flooded. The loss was of 3259.53 crores of Indian rupees. The district of Siddarthanagar and the village Neerpur are one the most flood prone regions within the state. The overflowing of the river Rapti causes severe floods in the village and the district. In 2013, in the months of June and September, heavy rains had flooded the region. A total of 224 villages, 27487 people

and 17732 hectare of agricultural land were affected by the floods in the district. Eleven people and eight animals died in the havoc. The village Neerpur faces recurrent floods in the district every year in the case of heavy monsoon. The village is therefore selected for the field work.

After introducing the thesis and the topic in the first chapter as, the division of the chapters is as follows,

The **Second chapter** discusses the various themes and categories relevant for the work in the existing literature. It covers the intensive literature on the various aspects of disaster and livelihood. The keywords that were helpful in locating the literature work were disaster and livelihood, disaster and vulnerability, floods and livelihood, disasters in India, floods in Uttar Pradesh, social support and disaster, gender and disaster, children during disaster, agriculture and floods and policy and disaster management etc.

The **Third chapter** elaborates on the rationale and conceptualisation of the work. It also discusses the method adopted for the study of this work. It states the broad objective of the study and the research questions probed in this work. The chapter also mentions in detail the process of data collection and the method employed for the study.

The **Fourth chapter** mentions the various socio- economic indicators in the study village Neerpur. It discusses the economic profile of the people in the village. It also lists out the key informants from the study village who provided valuable information for the work. This chapter also provides glimpse in to the condition of basic amenities and facilities in the village.

The **Fifth chapter** discusses the impact of recurrent floods on the livelihood of the people in the village. It discusses the viability of sustainable livelihood model to understand the livelihood concerns in recurrent disaster scenario. It discusses the various issues and challenges that impact a stable livelihood for the people. By analysing the state of various assets that people possess in the village to understand the state of livelihood in the village, it argues that the recurrent floods create a cycle of perpetual poverty because of unstable livelihoods and weak assets along with yearly expenditure of flood recovery and reconstruction in the village.

The **Sixth chapter** discusses the differential impact of floods on the various social categories in the village. It elaborates on the various issues and concerns faced by lower caste members, women, elderly, children and the physically challenged people in the village because of floods. It also analyses the community resilience and coping strategies developed by people in the face of the recurrent disaster. The chapter also deals with the formation of a skewed social image of the village because of the recurrent floods among the people in the other regions.

The **Seventh chapter** discusses the response of the state in preparedness, prevention and mitigation of the disaster in the village. It examines the state policy on disaster management at the level of the district and the village. It further looks at the prospects of Sendai framework and the recently introduced the National Disaster Management Plan (2016) in lieu of the challenges thrown in the field affected by the recurrent floods. It argues that for effective management of floods, the concerns posed by the region affected by recurrent floods are to be considered separate from the overall conjunction with the sudden disasters.

The **Eighth chapter** concludes the thesis with a brief summary and the major recommendations that study intends to offer.

This work is an attempt to add to the existing massive corpus of literature on disaster management from public health perspective. It hopes to highlight the everyday struggle of people in the region which are ignored by the political development because of their hard geographical realities. The conceptual framework in the disaster studies is dominated by the disasters that are public spectacle and undermine the concerns and issues of these regions and their inhabitants. This work aims to attend to those unheeded realities.

## CHAPTER- 2

### **SOCIAL IMPLICATION OF RECURRENT DISASTER ON LIVELIHOODS AND STATE RESPONSE: A REVIEW**

An exhaustive review of literature was undertaken related to the subject with the broad keywords searched under the literature on disaster such as disaster, livelihood, vulnerability, the relation of livelihood and household and various concerns of gender, caste, class structure and health. The idea of disaster has to be substantiated with respect to the various characteristics that play a dominant role. Livelihood is an important aspect of the vulnerability that emerges in and after a disaster. The attempt here is to explore the literature that exists on the variety of the conceptions of livelihood and the significant questions of caste and gender in livelihood. Emerging from the literature is also a discussion of the various approaches that come out in response to a disaster in meeting with the questions of livelihoods. The Sustainable Livelihood model dominates as the leading model to understand the significance of livelihood vulnerabilities and layers of discrimination in the form of caste and gender.

The keywords used to locate literature on the subject were disaster and livelihood, disaster and vulnerability, floods and livelihoods, disasters in India, livelihood in Uttar Pradesh, floods in Uttar Pradesh, social support and disaster, gender and disaster, children during disaster, agriculture and floods, institutions and disaster management, and policy and disaster management. Among the international journals that were consulted were *Natural Hazards*, *Disaster Prevention and Management*, *Annual Review of Sociology*, *The Journal of Educational Research*, *Ecological Economics*, *American Journal of Community Psychology*, *Disasters*, *Indian Emergency Journal Sociological Forum*, *Environmental Management*, *Disaster and Development and Economic and Political Review*. Several other articles were collected from journals by Sage, Emerald Insight, Oxford, Science Direct, Springer and Taylor and Francis. Several reports published by national and international organisations like United Nations Office for International Disaster Risk Reduction (UNISDR), SAARC Disaster Management Center (SDMC), International Federation of Red Cross and Red Crescent Societies,

National Disaster Management Authority (NDMA), National Institute of Disaster Management (NIDM) were also reviewed.

In India, a wide variety of literature focuses on the technical aspects of various disasters. They look at the technical aspects of disaster such as architecture, economic engineering and prediction and forecasting mechanisms. However, the main motive of this study revolves around the social issue of livelihood and disaster. Livelihood is a central concept in discussing poverty eradication in India. The study narrows down the search to discussions of poverty and livelihood in and during disasters. The articles that were consulted for review were written from a social science perspective which included issues of management, policy, governance, collaborations and institutional mechanisms with regard to disaster. They further discussed issues dealing with sociological aspects of disaster such as gender, race, old age, caste and class. The articles dealing with psychological impact of disaster were also considered. The articles that could not make into the review were largely written purely from scientific and geographic perspectives on disaster.

## **2.1 Defining Disasters**

A definition of disaster clarifies for a researcher the field of study and further helps in explanation, prediction and control. Perry distinguishes between a citizen or a sufferer's definition of a disaster from a social scientist's definition of disaster as the latter is concerned with purposes of research and theory (Perry, 2005). It is an accepted notion that disaster has many definitions and these definitions vary among different people (Parusuraman 2013, Perry 2007). Historically, the idea of disaster has evolved from being an 'act of god' to an 'act of man'. Disasters, when seen as 'act of god' or 'wrath of nature', were perceived as uncontrollable events brought about by external forces that cannot be managed and controlled. In the 1950s, this was the common theme in the disaster definitions where the source of the disaster was traced as nature which was out of control of human beings and the latter were only the victims of the unruly nature.

### **2.1.1- Disaster as Social Event**

The first attempt to formally define disaster as a social event came in dominance with Charles E. Fritz who contributed a chapter on disasters in a social science textbook in 1961. He defined disaster as

*‘an event concentrated in time and space in which a society or a relatively self- sufficient sub- division of a society undergoes severe damage and incurs such losses to its members and physical appurtenances that the social structure is disrupted and the fulfillment of all or some of the essential functions of the society is prevented.’* (Fritz cited in Kreps 1998:26).

In this understanding of disaster, the emphasis is on the post- disaster situation where the impact of disaster is the major factor. The chaos and disorganization that is caused by a disaster on spatially and temporally defined people were important for the conceptualization of disaster. In this understanding, disaster was seen as any event that had massive destruction as a consequence. Therefore, such an understanding perceived ‘natural’ phenomenon of floods earthquake, landslides and tagged them with wars, civil disturbances etc as disasters (Parasuraman, 2013). This strictly technical definition of disaster focused on the severity of the ‘event’, the magnitude of the loss occurred in terms of human lives, material assets and the disruption of normal social routine. Perry argues that such a definition of disaster continued to dominate till 1980s and is still in vogue sometimes despite several arguments about separating floods, earthquakes from wars, civil disturbances (Perry, 2005).

### **2.1.2- Disasters as Inclusive of Pre-Conditions**

Kreps added another turn to the definition of disaster by including pre-disaster conditions as significantly impacting the influence of disaster on a society. He defined disaster as, *‘events observable in time and space, in which societies or their larger sub- units (for example, communities, and regions) incur physical damages and losses and/or disruption of their routine functioning. Both the causes and consequences of*



*these events are related to the social structures and processes of societies and their sub-units'* (Kreps, 1984:312). The observation underlying the shift in the definition is the differential impact of same disaster on different contexts. The societies that are underdeveloped and lack infrastructure were more vulnerable to massive destruction in a disaster as compared to the societies and regions that are developed and enjoy basic facilities. This definition highlights the interaction of the disaster with the social, economic, physical and political environment of a society and the vulnerabilities that result from them. Perry mentions that Kreps influenced from definition of Fritz focused on four key elements in the disaster definition: forewarning, magnitude of impact, scope of impact and duration of impact. Implicit in this definition is also the idea that disasters are not always unpredictable and that some disasters can be mapped before their occurrence such as floods, drought and famines. Basically stressing that from this perspective, disasters can be prevented (Perry, 2007).

Susan Cutter (2005) has argued that instead of asking the question what is a disaster, one must ask *'what makes people and places vulnerable (and resilient) to environmental threats and unexpected events'*? She argues that in the 'modern system', the multiplicity of the risks induced from a range of factors like interventions of human and natural societies, unsustainable social practices and human induced threats like terrorism etc have led to the building of a 'global risk society' where the nature of the risk varies across places and social groups. Cutter argues, *"The reflexive nature of the risk society (influences risk production and is influenced by risks) suggests a need to move away from analyses (and control strategies) based on singular events with proximate causes (somewhat akin to a simple cause and effect model) toward a more dynamical understanding of the global interdependence of human, natural, and technological system"* (Cutter, 2005: 42).

### **2.1.3- Disaster as Disruption of Natural Routine**

Ronald Perry has traced the evolution of this phase of disaster definition as the Classical period in which he argues that the common theme in the definitions of this period was the disruption of the normal routine, the readjustment and change in the pattern. The notion of disaster as an 'event' can be found in all the understandings of disasters of the

period. He has highlighted that the influence of the period continues in the present times also. Stalling (2005) defines disaster as ‘fundamentally disruption of routines’. He acknowledges that disasters are only one kind of occasions that dismantle the routines. Porifirev (1998) also perceives disasters as an event that destabilizes the social system and requires the interference to reinstate normal functioning. Henry Fischer (2003:94 cited in Perry, 2005: 27) admitted Fritz’s definition of disaster as events disrupting normal routine. Oliver (2005) also brought forth a definition of disasters as events that cause massive death and damage the social, political and economic order of society. The dominance of classical period can thus be felt strongly in the present times in the definitions available in policy making and research on disaster (Perry, 2005).

#### **2.1.4- Disaster as Hazards**

The second approach to define disaster is to understand it in terms of hazards. In this perspective, disasters are seen mainly as hazards- earthquakes, floods, landslides and others. The leading focus is on the process associated with the target agent apart from social factors. Disasters are viewed as extreme events that arise when a hazard agent intersects with a human system or settlement. This definition is popular among geographers and geophysical scientists. Susman et al (1983:284 cited in Perry, 2007:9) view disaster as “*the interface between an extreme physical event and a vulnerable human population.*” John Oliver (1980:3 cited in Perry 2007:9) defines disaster as events of great magnitude and frequency that cause significant human damage and major hardship. In these definitions, the focus is on the cycle of hazard agent. Perry argues that although these definitions continue to understand disaster in their origin as hazards but they move on to focus on the social dimensions in terms of vulnerability and resilience.

#### **2.1.5- Disaster as Social Phenomenon – Social Description**

The third conception of disaster that Perry chooses to highlight is the notion of disaster as a social phenomenon. Although the definitions according to the third perspective are closer to the classical tradition but they vary on their “emphasis on social phenomenon, their attention to vulnerability as socially constructed and the idea of social change” Perry (2007:10). The idea behind the conception of disaster as a social phenomenon is

to highlight as sociologists, the social in a disaster. Under this notion, the event is not emphasized so much but the focus is on the social dimensions of the events. Quarantelli has identified several major features of disaster as its definition. Disasters are the sudden and onset occasions, disrupt the routines of collective units, lead to the adoption of unplanned courses to adjust to the disruption, have unexpected life histories in social space and time and pose danger to socially valued objects (Quarantelli, 2005). The disaster in this idea is recognised as a social disruption that originates in the social structure and might be remedied through changes in social structure. However, the association with the classical tradition of disaster definition can be seen here clearly.

The conceptualization of disaster is the crucial first step that forms the foundation on which the prevention and management mechanisms are based. An approximate definition of disaster is a necessary condition for recognizing the multiple aspects and features of a particular hazard. The policies and plans of actions that are formulated in the event of a disaster are based on the understanding of the disaster developed in its definition. In the different ways of defining disaster that we have seen so far have a theme running in common which is the understanding of the disaster as a sudden and an unanticipated event. Some of these definitions are “**non-routine events** in societies... that involve conjunctions of historical conditions and social definitions of physical harm and social disruption” (Kreps & Drabek, 1996:133), “a **basic disruption** of the social context within which individuals and groups function (Fritz, 1961 cited in Kaniasty and Norris, 2004) and ”a disaster is the result of vast ecological breakdown in relation between human and their environment, a **serious and sudden event** on such a scale that the stricken community needs extraordinary efforts to cope with it often with outside help or international aid” (Nozi 1997:7). As highlighted here and above, the focus of disaster has primarily been on studying it as a ‘non- routine’, ‘disruption’ and ‘sudden’ event.

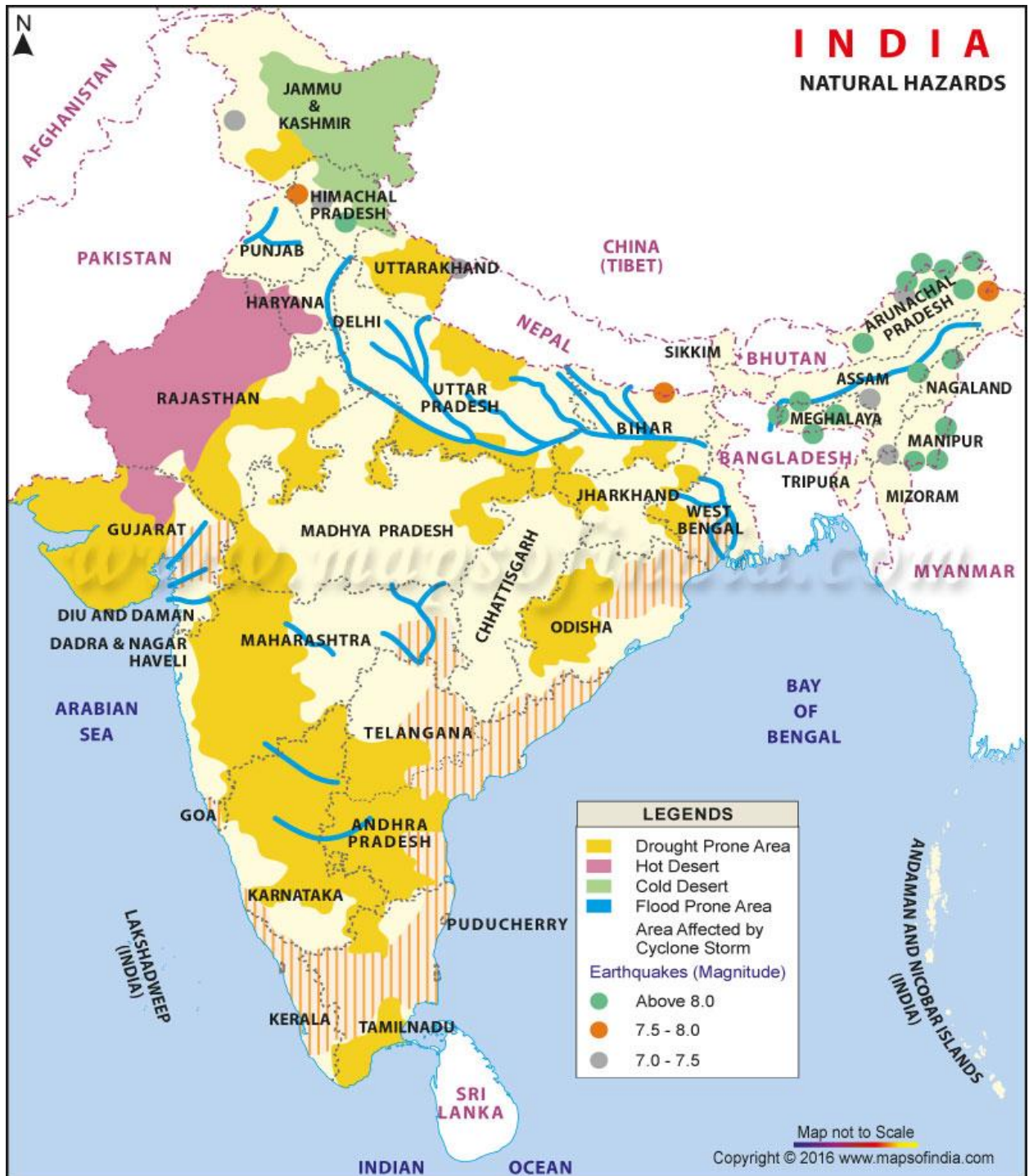
What is clearly missing here is an understanding of disaster as recurrent or repeat disaster. The few stances that recognise the repeatability of disaster fail to give it equal emphasis. The bias can be felt in policy making too where the dominant understanding of disaster continues to be that of sudden and flash disasters. Yadav (2014) has argued

that the issue of regular, frequent and recurrent events which lack uncertainty and shock both among the bearers and the managers are ignored by the analyses. He mentions that one of the major calamities that has hit and claimed extreme loss in India is the recurrent or regular floods. Flash floods are more sudden and episodic and the reasons for such disasters are the unpredicted climatic changes caused by human induced interventions. Recurrent floods, unlike the flash floods, are predictable and foreseeable with the seasonal changes happening around the year.

## **2.2 Disaster Scenario in India**

India's geo-climatic conditions as well as its high degree of socio-economic vulnerability make it one of the most disaster prone countries in the world (Ministry of Home Affairs New Delhi, 2011:1). It has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions. Floods, droughts, cyclones, earthquakes and landslides have been recurrent phenomena. About 60 per cent of the landmass is prone to earthquakes of various intensities; over 40 million hectares is prone to floods; about 8 per cent of the total area is prone to cyclones and 68 per cent of the area is susceptible to droughts (Disaster Management of India, 2011:3). During the last thirty years' time span, the country has been hit by 431 major disasters resulting into enormous loss to life and property. According to an estimate, 43039 people were killed and about 150 crore rupees were lost by various disasters in the country during these three decades (ibid). Figure 2.1 depicts the hazard profile of the country with respect to various disasters such as floods, earthquakes, droughts and cyclones.

Figure 2.1- Hazard Profile of India



Source: <http://www.mapsofindia.com/maps/india/natural-hazard.htm>.

**Table 2.1-Disaster scenario in India in term of economic and human losses during 2000-2015**

Disaster type	Disaster subtype	Events count	Total deaths	Total affected	Total damage ('000 US\$)
<b>Natural Disaster</b>					
Drought	Drought	3	20	350000000	1498722
Earthquake	Tsunami	1	16389	654512	1022800
Earthquake	Ground movement	7	21520	7113184	3743000
Epidemic	--	18	764	9613397	131000
Epidemic	Parasitic disease	2	62	29636	0
Epidemic	Bacterial disease	6	190	34837	0
Epidemic	Viral disease	13	1153	160897	0
Extreme temperature	Cold wave	15	2547	25	0
Extreme temperature	Severe winter	2	320	0	0
Extreme temperature	Heat wave	10	6122	25	400000
Flood	Coastal flood	1	80	7200000	275000
<b>Flood</b>	<b>Riverine flood</b>	<b>106</b>	<b>19603</b>	<b>243442892</b>	<b>37845347</b>
Flood	Flash flood	18	2336	15883526	322000
Landslide	Landslide	12	543	16258	0

Landslide	Avalanche	4	308	5000	50000
Storm	Tropical cyclone	23	906	20327554	8599512
Storm	Convective storm	25	696	659039	177000
<b>Technological Disaster</b>					
Industrial accident	--	1	32	14	0
Industrial accident	Explosion	19	412	2601	200000
Industrial accident	Gas leak	2	0	751	0
Industrial accident	Fire	37	1588	157578	429200
Industrial accident	Poisoning	3	132	187	0
Industrial accident	Other	29	1553	6465	0
Miscellaneous accident	Collapse	34	1114	631	0
Transport accident	Water	54	2369	363	0
Transport accident	Rail	76	2836	5011	2000
Transport accident	Air	10	700	39	36000
Transport accident	Road	165	5211	3166	0

Source: EM- DAT: the OFDA/ CRED international Disaster Database-Université Catholique de Louvain, Brussels (Belgium).

Table 2.1 reflects that several disasters have wreaked havoc on the people in the country and incurred massive losses in the period of fifteen years. In the case of drought, while the number of deaths is less as compared to other disasters but if one looks at the number of people affected, the story is different. The total damage caused by drought is also an enormous amount. Earthquakes from tsunami and ground movement are also major disasters in the country. The number of deaths, affected people and the total damage from these earthquakes are also a humongous number.

If one looks at the flash floods, one can clearly see that the amount of damage incurred is lesser compared to the recurrent floods in the form of riverine floods. Riverine flood is one such natural disaster that causes great havoc in terms of frequency, affected population, and damages incurred. It is followed only by earthquake in the amount of destruction unleashed. The number of people affected by riverine flood is enormous exceeded only by drought. It is the most frequent disaster that strikes the human population as compared to other natural disasters. During the last twenty years, floods in the country have brought about maximum ravages.

### **2.3 Defining Floods**

Floods may be defined as an overflow of water from river or other bodies of water due to excessive rainfall or other inputs of water. It occurs when a river or stream break out through their natural or artificial bank owing to heavy rainfall, melting of snow, dam failure, etc. Usually, the inundation is temporary and the onset of water is confined to the adjacent land areas. This kind of flood occurrence is influenced by natural phenomena. Further, flood occurs due to human interventions like population pressure, deforestation, urbanization, easy accessibility of land in low-lying flood prone areas, lack of flood control measures, etc. Based on its location flood can be local, riverine, coastal, and flash. Local flood occurs due to heavy and prolonged rainfall during the rainy season. Sometimes, seasonal storms and depressions also give rise to local floods in an area. River flood occurs due to heavy rainfall or snow melting in upstream areas, or tidal influence from the downstream. River floods inundate the largest areas of land and destroy more lives and property than any other form of flood (IFRC& RCS, 1999). Rapid onset or flash floods occur mainly in



steep rivers with small and steep mountainous catchments after periods of intense rainfall. These floods are accompanied by a rapid rise and fall in water levels. The sudden onrush of water from mountains and high-flow velocity causes intense damages to crops and property and greater direct loss of life than slow-onset floods.

Floods are the most frequent natural calamities faced by India (Jain, Agarwal, & Singh, 2007; Gupta, Javed, & Datt, 2003) in different magnitudes, year after year (see Table 2.1). The main causes of floods in India are inadequate capacity of river sections to high flows, silting of riverbeds, and drainage congestion. The frequency of floods in India is more than half of the total number of floods occurring in Asia in each decade (Parasuraman & Unnikrishnan, 2000). Every year millions are rendered homeless due to floods and lakh of hectares of crops are damaged (Arya, 2007). Twenty-three out of thirty two-states/union territories in the country are subject to floods covering roughly one-eighth of the country's geographical area (Arya, 2007; Gupta et al., 2003). According to the Rashtriya Barh Ayog (National Commission on Flood), the area prone to floods in India is 40.0 million hectares (Ministry of Water Resources, 2009). Roughly, 30.0 million people in the country are affected and more than 1500 lives lost each year. Assam, Uttar Pradesh and Bihar are among the flood prone states in the country (Jain et al., 2007).

In the Indian scenario, among the states mentioned, the kind of floods that inflict on the society are the recurrent floods. India faces floods primarily in the monsoon period which lasts from June to August. During this period, because of the overflow of water in the rivers, the land that is on the lower side submerges in the water. The recurrent floods exact a heavy toll on the agricultural land, household areas and other nearby areas. We have seen that in most of the definitions and conceptualisations of the disaster, the dominant idea is that of a sudden disaster. The question that emerges is the way in which sudden disasters are different from recurrent disaster. The recurrent disaster such as recurrent floods invite for a different approach to policy making and planning as we shall see in the chapters. The dynamics of a society suffering from recurrent floods is radically different from that of a society under the impact of flash floods. In such a case, the question is that if the policy outlook meant for sudden disasters could be implemented to the recurrent floods as well or not. If there is a need to recognize the special impact of recurrent floods then what are the aspects that need to be highlighted in the recurrent

floods? The concern of livelihood for people is the dominant one during the time of disasters. Although, the impact of a disaster can be disrupting for the society in many ways, the loss of livelihood is a major consequence of disaster. In the next section, we shall explore some of the major understandings of livelihood.

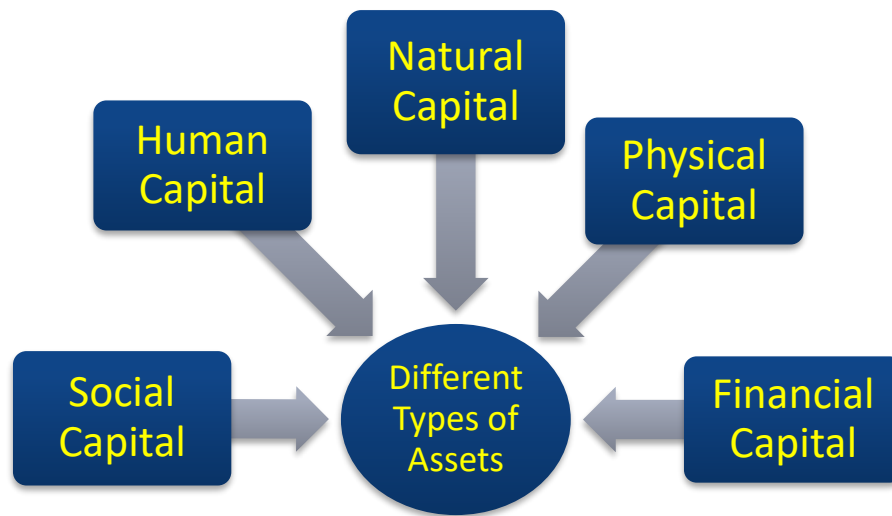
## **2.4 Conceptualising Livelihood**

Livelihood may be defined as a means of gaining a living, or a combination of the resources used and the activities undertaken by individuals, households and communities in order to live (Antony, 2009). Ellis (2000) defines livelihood as the resources (natural, physical, human, financial, social, and political), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household. A livelihood is a means of support, something that provides income to live on, especially paid work to secure the necessities of life. Livelihood activities are economic activities that people know, own and undertake to earn income today and into the future. Livelihood activities undertaken by people are shaped by their knowledge, inherent capabilities, and assets. These activities are enhanced by five basic assets with linkages to each other: natural, social, human, physical and financial capital (Antony, 2009; Nagarajan, 2006; Twigg, 2001). These assets change over time and differ among households and communities. Access to them is vital for livelihood sustainability and resilience/restoration after a shock (Nagarajan, 2006). Thus, a livelihood not only means the activities that people carry out to earn a living but it also includes all the different elements that contribute to and affect, their ability to ensure for themselves and their household a living. This includes three key parts, **1)** the assets that a household owns or is able to gain access to-human, natural, social, financial, physical, political, and others; **2)** the activities that allow a household to use those assets to satisfy its basic needs; **3)** the different factors that a household itself may not be able to control directly, like the seasons, natural disasters or economic trends, that affects its vulnerability, policies, institutions, and processes that may help households, or make it more difficult for them, to achieve an adequate livelihood.

Livelihood assets are the means of production available to a given community that can be used to generate material resources sufficient for the community's survival.

The five forms of livelihood assets are human, social, natural, physical, and financial capital.

**Figure 2.2 Different kinds of Livelihood Asset**



Source: (Antony, 2009)

- Human: skills, knowledge, ability to labor, good health.
- Social: the social resources upon which people draw in the pursuit of livelihood objectives (e.g. networks and connections, membership of groups, relationship of trusts, reciprocity, and exchanges). Social capital also includes a household's range of contacts/access to formal government structures, access to information and agricultural technical support, degree of gender equity, as well as the number of social groups to which a household belongs (Hahn, 2009).

- Natural: the natural resource stocks from which resource flows and services are derived (e.g. land, forests, marine/wild resources, water, protection from storms and erosion).
- Physical: the basic infrastructure and producer goods needed to support livelihoods. Infrastructure components include affordable transport, secure shelter, adequate water supplies and sanitation, access to information, etc. Producer goods are the tools and equipment that people use to function more productively.
- Financial: includes saving and debts, and inflows of money other than earned income (e.g. Pensions and remittances).

The availability of these assets with a household determines the status of livelihood of it. The means adopted to procure these assets also vary from household to household. Each household adopts strategies to ensure livelihood for their well being.

## **2.5 Livelihood Strategies**

Livelihood strategies are the choices and activities that people make and undertake in pursuit of income, security, well-being, and other productive and reproductive goals (Chambers and Conway, 1991; Ellis, 1998; Adato and Meinzen-Dick, 2002). At the basis of these choices lays the endowment of capital or assets, which determine the possibilities people have (Van den Berg, 2009). Livelihood strategies are the range and combination of activities and choices that people make in order to achieve their livelihoods goals. On the basis of their personal goals, their resource base and their understanding of the options available, different categories of households-poor and less poor, develop and pursue different livelihood strategies. These choices are reflected in the way that people use their assets and as such are an important part of household behavior, while determining well-being. In rural area, these livelihood strategies are based on the use of the main assets of rural households: labor and land (Jansen et al., 2006).

A study in Ethiopia shows that, the rural livelihood strategies and rural people depend on a single productive activity, mainly farming. Unlike most developing countries, only 35 percent of rural respondents rely on a combination of farming and

other income earning activities. Access to land and capital are important in determining which groups are more likely to engage in farming, non-farm activities, migration, or multiple activities. The rich and elderly with access to land involve only in crop production, while the rich and the young landless and young landowners derive their incomes from more than one activity, producing high returns. Likewise, the poor with land engage in both farming and low-return non-farm activities. However, landless poor men and women engage only in less remunerative non-farm activities (Seraje, 2007).

Some studies of livelihood strategies have revealed that diversification is a commonly used strategy for coping and adapting with changes in the availability of resources, and that the poor are continuously “doing something” in response to stresses and shocks (Marschke and Berkes, 2006:1). ‘Doing something’ may stem from a combination of livelihood skills and household adaptability that contribute towards their well-being. Declining productivity or reduced livelihood options would prompt the poor to attempt to diversify their assets and activities. Such strategies may even improve the natural resource base and reduce household poverty.

Different livelihood models have different livelihood strategies. The modified sustainable livelihood model (which we shall discuss in the next section) contains two kinds of strategies viz short and long term. Short term includes seeking opportunities within or outside the sector; borrowing to improve technology and long-term strategies protecting habitat; investing in implant of artificial reef; sending children for higher education. These livelihood strategies play between vulnerability context and livelihood outcome. Livelihood outcomes are the goals to which people aspire, the results of pursuing their livelihood strategies. The variety of livelihood outcomes may include increased income, reduced vulnerability, increased well being, improved food security and more sustainable use of natural resources. These outcomes are important because they help us understand the result of people’s livelihood strategies in particular context, their priorities, the reason for choosing particular strategy over another and their likely response to new opportunities and constraints. In short, livelihood strategies involve process at different levels with livelihood assets. In these processes livelihood strategies will become relevant when the outcome leads to betterment from the previous situation.

The question that emerges from this discussion of the understanding of livelihood and the various strategies of procuring livelihood is, as to how does the context of disaster impact these livelihood choices. It becomes pertinent to know that if the risks were that of a recurrent disaster, in this case that of recurrent floods, how does the livelihood strategies play out in the field. In the context of recurrent floods, what are the possible changes in livelihood aspirations and outcomes of the people. In short, what are the various ways in which a recurrent disaster impacts the livelihood of the affected people. In the next section, we shall discuss the various ways in which households respond to several vulnerabilities, hazards and risks with respect to their livelihood security.

## **2.6 The Livelihood of a Household in Disaster**

The household is a domestic group often assumed to be the basic unit of production and consumption in the society (Weist et al., 1994). The households are the basic unit of production and reproduction, and the one at which critical decisions are made. It is conceived as a social group, which resides together, shares the same meals, and makes joint or coordinated decisions over resource allocation and income pooling (Ellis, 1998). They are differentiated by relative well-being and their access to resources and power. They use their assets and capabilities to engage in many different strategies to secure their livelihoods. A household is usually based on kinship, and in India, it normally consists of joint or extended family members.

The characteristics of a household are that they have basic needs like food, water, shelter, education, etc. To meet these needs, household member has had equal access to resources or services, e.g. water, food, shelter, healthcare, electricity, etc. This is gained through payment, which, in turn is secured by undertaking productive activities. There are barriers to accessing resources or services resulting in reduced quality and quantity of resources accessible to the poor. These barriers are positioned in society, e.g. culture, gender, religion, status, poverty; control of resources by structures, e.g. government, private sector employers, and by processes, e.g. laws, regulations, which may be discriminated in particular, against the poor.

The livelihood security of a household is to be seen as adequate and sustainable access to income and resources to meet basic needs (including adequate access to food, potable water, health facilities, educational opportunities, housing, and time

for community participation and social integration). Livelihoods can be made up of a range of on-farm and off-farm activities that together provide a variety of procurement strategies for food and cash. Thus, each household can have several possible sources of entitlement, which constitute its livelihood. These entitlements are based on the endowments that a household has, and its position in the legal, political, and social fabric of society (Drinkwater and McEwan, 1992 cited in Frankenberger et al., 2000). The idea of Household Livelihood Security, as defined above, embodies three fundamental attributes: 1) the possession of human capabilities (e.g. education, skills, health, psychological orientation); 2) access to other tangible and intangible assets (social, natural, and economic capital); and 3) the existence of economic activities (Drinkwater and Rusinow, 1999). Livelihoods are secure when households have secure ownership of, or access to, resources and income earning activities, including reserves and assets, to offset risks, ease shocks and meet contingencies (Chambers, 1989). Household members use their capabilities and their assets to carry out activities through which they gain their livelihood. Household assets refer to the resources that households own or have access to for gaining a livelihood. Where capabilities are the combined knowledge, skills, state of health and ability to labour or command labour of a household. Household strategies are the ways in which households deploy assets and use their capabilities in order to meet households' objectives and are often based on experience (Vriese, 2006).

### **2.6.1 Vulnerability of the Household During Disaster**

The vulnerability of any physical, structural, or socio-economic systems to a natural hazard is its probability of being damaged, destroyed or lost (Birkmann, 2008; Pistrika & Tsakiris, 2007; Alexander, 2006; Dixit, 2003). Vulnerability in the disaster context, is a person's or group's capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard (Mohammed et al., 2011; Cançado et al., 2008; Neumayer & Plumper, 2007; McEntire, 2007; Simpson, 2006; Fothergill & Peek, 2004; World Health Organization, 2000). Vulnerability, as defined by inadequate capability, is linked to a specific group(s) of people or population. These people are perceived as vulnerable and thus it is difficult to protect them from a disaster.

The degree of vulnerability is defined by factors such as socio-economic status, differences in wealth, occupation, caste, ethnicity, gender, disability, health status, age, immigration status (legal or illegal), the nature and extent of social networks, and so on (Mohammed et al., 2011; Birkmann, 2008; Khunwishit, 2007; Fothergill & Peek, 2004). Vulnerable populations are more affected by the same disaster when compared to non-vulnerable populations. Moreover, among vulnerable population, the impacts of disasters vary depending on how vulnerable a person is. For example, a person who is old, disabled, a single-mother, an immigrant, and living in hazard prone areas will be more affected by a disaster than one who is a non-vulnerable person who living in hazard prone areas. Thus, a person who possesses more than one or all characteristics of vulnerability would be more susceptible to and affected by a disaster than one who possesses only one, none or fewer characteristics of vulnerability (Khunwishit, 2007).

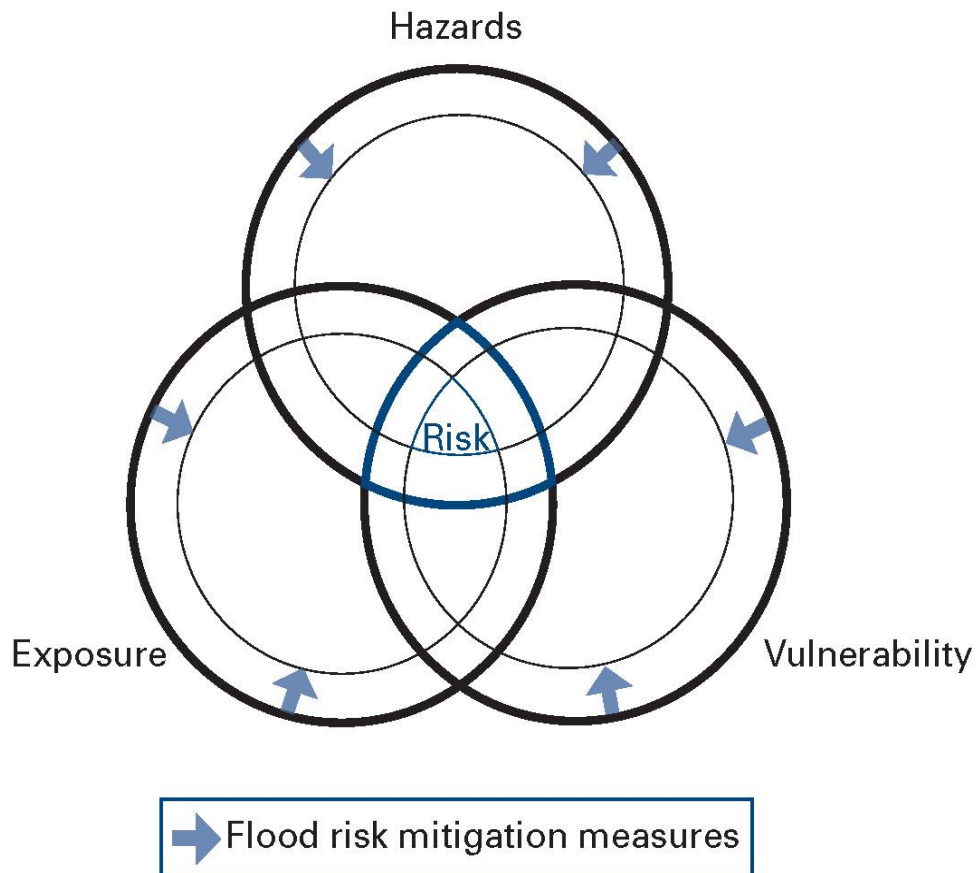
Vulnerability is not static but a dynamic process that depends upon the social, economic, and political contexts that change over time, which will consequently affect the probability of loss. The dynamic nature of vulnerability makes it difficult to quantify. Vulnerability has a time-space dimension that fluctuates according to the type of hazard (Pistrika & Tsakiris, 2007; Simpson, 2006). More specifically, the vulnerability of populations varies according to the time of day, day of the week, and season of the year (Simpson, 2006). Further, vulnerability is group specific depending on the socio-economic configurations of society. For example, for an industrial society flood hazard may not be as severe as compared to the agrarian country where flood havoc cripples the backbone (agriculture) of the economy.

The extent of damage caused by specific flood event depends on the vulnerability of the affected socio-economic and ecological systems (Cutter, 1996; Mitchell, 1989). Vulnerability means being prone to or susceptible to damage or injury i.e., the degree to which someone's life and livelihood is put at risk by a discrete and identifiable event in nature and society (Blaikie et al., 1994). The livelihood sensitivity tool is grounded in the approach that essentially melds a  $\text{hazard} \times \text{vulnerability} / \text{readiness} = \text{risk}$  framework with the common Pressures-State-Impact-Responses (PSIR) approach (Wisner et al., 2004). The complex link between vulnerability and hazards risk has been explained through this approach (Figure 2.3).



**Figure 2.3 Flood Risk Mitigation Measures**

**$Risk = Hazards \times Vulnerability/Readiness$**



Source: Wisner et al., 2004.

Vulnerability of rural families to livelihood is due to the impact of external environment such as flood (Blakie et al., 1994). About 80 percent of the tsunami-affected households lost their main source of income, and 90 percent of those households had productive assets destroyed or damaged (Nagarajan, 2006). Some aspects of household vulnerability vary with the seasons. While occupational diversification may allow households to maintain a level of income throughout the year, there may be periods of high income (as when crops are harvested or fishing is good) and low income (as when fishing is poor or not possible due to storms). A household's ability to weather depends on the availability of other sources of income, including remittances from family members living outside the area, informal loans from money lenders or traders, and systems of mutual support at the community level (Pomeroy et al., 2006). In addition, local factors have also been shown to affect vulnerability at the household level. Eriksen et al. (2005) described

how Kenyan and Tanzanian households, where each member specializes in a limited number of intensive cash-yielding coping strategies, were generally less vulnerable than those whose members spread their time among several marginal livelihood activities. They also noted that many rural households lack the skills and access to capital, required to engage in the most desired, cash-yielding coping activities, and found that time availability, especially among women, was an important determinant of the ability to engage in favored coping strategies (Hahn, 2009: 2).

Vulnerability of the household with regard to the specific disaster of flood can be measured in terms of a perceived threat to life, injury to oneself or another household member, loss of household property and crop loss, narrowly escaped from being washed away, seen the nearby village being washed away, death of relatives in flood, witnessing being injured or dead, heard of someone in the town or village who was injured or dead in flood, and house damaged fully or partially, overall damage, damage to property, financial loss, and relocation experience (Sasmati et. al., 2009:15). Floods come with multiple shocks to household economic resources and their daily living environment. Micro-level research suggests that lower incomes are most likely to be impacted, and feel the impact most keenly (Lindell and Prater, 2003 cited in Hubner, 2008). Property loss was the leading economic loss among low-income families (77%), while income loss was the primary economic loss among high-income families (51.98%) (Huang et al., 2008). Fothergill (2004) discovered that poorer residents could not afford floods insurance, even though they were aware of its availability and benefit (Fothergill & Peek, 2004: 93). The ability of households to maintain livelihood necessity diminishes after successive and frequent floods (Ninno & Lundberg, 2005). Mukherjee & Nayyar (2011) reported households in Pakistan had more difficulty in smoothing consumption after successive frequent disasters. Similarly, Deaton (1992) finds that the ability of households to maintain consumption diminishes after recurrent floods (Ninno & Lundberg, 2005). The questions that arise now are with regard to the vulnerability of the household in recurrent disaster. The impact on livelihood of the household in the case of a seasonal disaster is different from sudden disasters that are devastating and disruptive of the status quo. How the scenario of livelihood in a region under recurrent disaster unfolds is a crucial question that emerges from this study of literature.

## **2.7 Differential Impact of Disaster and Vulnerability**

The impact of disaster on a population varies according to the social, economic and political standing of the actors in the society. Their hold on the resources in the pre-disaster situation impacts their access to resources in the aftermath of the disaster. This is a true scenario especially in the case of recurrent disaster. The weaker positions of lower caste and women in society in every day affairs of society make them particularly vulnerable in the situation during recurrent floods.

### **2.7.1 Gender and Economic Dependency**

Women in developing countries have been called the 'invisible earners' (Weist et al., 1994:15). Women's productive work, particularly in child-rearing and other domestic work, as well as their enormous contribution to national food production requirements, is hidden in statistics (Chiu, 1982 cited in Weist et al., 1994). Women are not only responsible for attending to the basic needs of their children and families, but account significantly for productive and income-generating activities in their respective communities (Weist et al., 1994). This pre-disaster condition in many societies, denies to women recognition for the work they actually carry out rendering them and their dependent children relatively more vulnerable than men do (Weist et al., 1994). Women are likely to be adversely affected by damage to economic livelihoods because basic survival strategies such as securing water, food, and wood for cooking purposes, often fall on women, representing an extra burden on top of caring for and nurturing the family (Neumayer & Plumper, 2007).

Females, generally have lower socio-economic status than males, and therefore, females are more sensitive to the possibility of resource loss (e.g. monetary loss) (Ho et al., 2005). Further, women in comparison to men have restricted access to the formal and regulated labor market (Monzini, 2001). In India, a women's work in the household are not acknowledged as a form of work and not given credit as such. Only the work fetching cash outside the home is counted as a females' contribution to the household and given due credit. Further, socio-cultural beliefs and practices often preclude women's ownership of land and other production technologies such as tractors or grinding mills (Weist et al., 1994). Statutory and/or customary laws often restrict women's property and land rights and make it difficult for them to access credit and agricultural extension services (Brody et al., 2008). Low literacy

coupled with very low levels of ownership of land and other productive assets makes women prone to destitution. Further, patrilocal residence, patrilineal descent, and the prohibition against women inheriting property tend to enforce the social norms that women are dependent on men from birth until death (Samarasinghe, 2008, cited in Locke, 2010).

### **2.7.2- Gender and Women-headed Households**

Women-headed households are now an increasing phenomenon worldwide. The women-headed household refers a unit of residence or domestic consumption where the lead responsible individual is a 'woman' (Weist et al., 1994:4). In these households, a woman is deemed responsible by members of the unit and by the community, and usually this person is the main income generator for the household. It consists of women with severely physically challenged husband(s) and young children, physically challenged women, widows, and young single women with no relatives.

Woman-headed households are particularly vulnerable to disasters. Left as widows from disasters, abandoned by men in search of an alternative life, or forcefully separated in conflict-from a spouse, women are more likely to remain behind in the disaster zones to attempt a reconstruction (Weist et al., 1994). Women-headed households may suffer from increased workloads and lack of access to resources where male household members out-migrate (Nelson, 2011) as women have to take on traditional male roles in disaster risk reduction (Neefjes et al., 2009 cited in Nelson, 2011). The post disaster outmigration of males has an enormous impact in workloads; both for those that migrate and crucially for those that remain behind, and who have to take on responsibilities vacated by those that have migrated. In most families, these vacated responsibilities largely fall on the shoulders of mothers/wives and adolescent daughters (CARE International, 2002). Further, women who become the primary breadwinners also have to play the socializing roles of both mother and father in providing material and emotional support to the children (Weist et al., 1994).

Woman-headed households often have little control over resources, fewer resources to cope with and adapt to stresses of all kinds, and rely on more climate sensitive resources and livelihoods (Nelson, 2011), and the young dependent children of these

households suffer disproportionately from malnutrition and from the added stress of prematurely having to contend with adult responsibilities (Weist et al., 1994). A study from Bangladesh reports instances of women in Bangladesh becoming destitute following a disaster as male relatives confiscated family land from a woman in the event of her husband's and son's deaths, leaving women and daughters poverty stricken and destitute. Sadly, there were no legal provisions to protect women and their families against such problems (WHO, 2002).

### **2.7.3- Gender and Decision Making**

The most striking common element between women in developing countries and those in disaster prone areas is that of marginalization due to lack of adequate decision-making power and control over resources (Taft, 1987 cited in Weist et al., 1994). The social structure of most societies formally relegates women to inferiority and dependency, increasing their vulnerability through their disempowerment in the household (Weist et al., 1994). Women are more likely than men to be absent from decision-making, whether in the household or at community, national or international levels-either because their contribution is not valued or because they do not have the time, confidence or resources to contribute (Brody et al., 2008). Major household decisions are the male prerogative and women generally have low decision-making power within the family. This dependency is further aggravated during the emergency period, and the wife (or the females of the household) is expected to take a supportive and submissive role. A 1991 cyclone study in Bangladesh noted that many women perished with their children at home, as they had to wait for their husbands to return and make an evacuation decision (Gender and Health in Disaster, 2002). Women who are dependent on men in the household may also be kept in more passive 'victim' roles, with less of a voice in the recovery process in its male-gendered management structure. Besides, low participation of women in planning and decision-making at the local, district and state levels poses a considerable barrier to gender-sensitive disaster response, and results in insufficient attention to disaster-related violence in the communities. With these gender biased structures in place in the pre-disaster situation, the questions that become important are about the condition of women in the case of repeat disasters. What are the various challenges they face in region where they face disasters seasonally?

In case of caste identities, one finds the presence of a hierarchy in the society where one's access to resources is controlled. The location of houses in the region, the access to village sabhas, panchayats, the access to public facilities of temples, wells, cremation grounds, schools and colleges are also at times significantly impacted by one's status in the caste hierarchy. The livelihood opportunities available to an individual are also determined by their caste group in the caste system; certain works are prohibited for the lower castes and upper castes respectively. For example, one does not find many upper caste people engaged in jobs related to cleaning and hygiene. The hierarchy is also maintained in the sphere of decision taking where the lower castes do not generally speak up in the presence of the higher castes. Such situations exist in the pre- disaster society in a region. The work reflects with regard to the specific caste locations in the study region during recurrent disaster on the impact of the caste equations on the vulnerability of the people.

#### **2.7.4 Social Vulnerability Approach**

The Social Vulnerability Approach is an approach that is used to understand the different vulnerabilities that emerge in the field in the case of recurrent floods because of the social identities of the actors. An important approach encompassed by the structural paradigm, social vulnerability approach, underscores the spatial dimensions of social and economic stratification in increasing the susceptibility to hazards due to disasters (Hewitt, 1998). According to the 'social vulnerability' paradigm, pre-disasters social cultural configurations such as caste, class, gender, etc. are an important predictor of hazards due to disasters. It relates to differences in gender, age, social position, incomes, and other potential elements that influence the predisposition to hazards and ability to cope with adverse impact. Socio-economically disadvantaged or marginalized groups, including women, the elderly, racial/ethnic minorities, the poor, and those with lower levels of educational attainment are disproportionately affected by disasters (Yadav & Pandey, 2013).

Social vulnerability means complex set of characteristics that include initial well-being, livelihood resilience, social protection, and self protection, social and political network and institutions (Cannon, et al., 2003: 5). Also, socio-economic status is a significant predictor in the pre- and post disaster stages, as well as for the physical and psychological impacts (Fothergill & Peek, 2004: 90). The work employs the

understanding of vulnerability offered by this approach to capture a broad notion of vulnerability faced during disasters.

## **2.8 Livelihood Approaches**

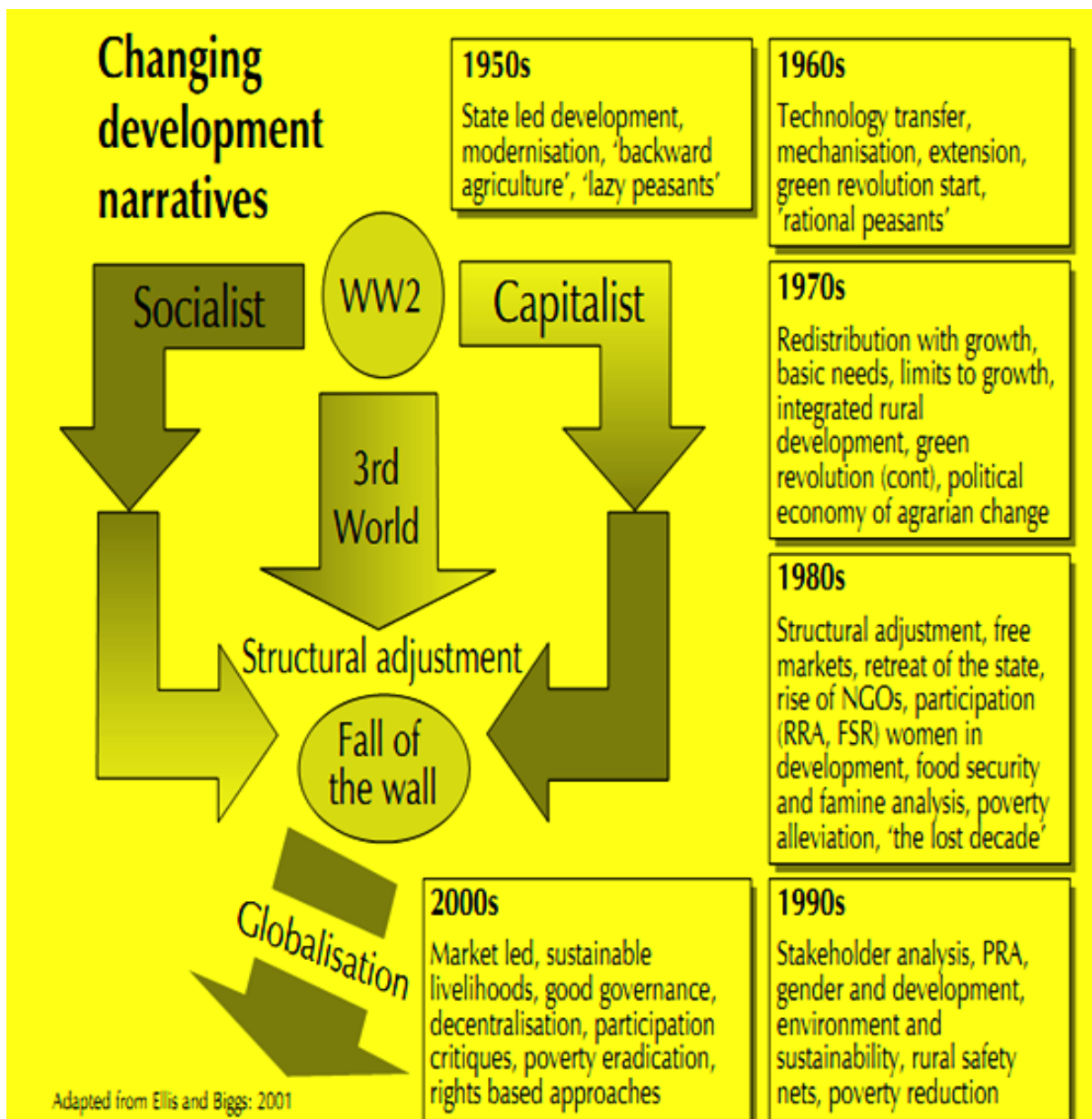
The whole livelihood related discourse is focused on poverty. In disaster studies this approach is clearly reflected. The disaster oriented and disaster centric livelihood plan and policy has no separate space. In the name of livelihood in a disaster prone area, the agency just tries to maintain the previous situation. The understanding of livelihood which exists in economics is adopted in to disaster without taking in account the changed context of a disaster prone area.

In livelihood studies, ‘Sustainable Livelihood Approach (SLA)’ is widely used to understand and promote the livelihood strategies. Some other international organizations like CARE, Oxfam, United Nations Development Programme (UNDP) also propose the livelihood model. Now we can discuss the Sustainable Livelihood Approach (SLA) and Framework which is widely used in development programme.

The narratives of the livelihood and idea of sustainable livelihood approach has come up with reference to the changes in world economics. In 1950s, sustainable livelihood model is influenced with modernization of agriculture and later in 1960 it is influenced with technology, which led to green revolution. During 1950 to 1960, modernization and development was influenced from Keynesian economics. In the era of 1970, the global scene was characterized by national liberation struggles and emergence of more radical social agendas, and an upsurge of environmentalism. The 1980s, which saw the rollback of new thinking in the 1970s at least within the mainstream, heralded the collapse of the socialist project and the new eminence of the World Bank and the International Monetary Fund (IMF). In 1987, the World Bank introduced structural adjustment policies, which relied on a basic formula: a reduction in public spending; the removal of subsidies on food, health, and education; higher interest rates; currency devaluation; lower real wages; reduced tariffs; and the privatization of services. This laid the foundation for market liberalization and the globalization of the world economy. Domestic economies were opened up to international trade and financial flows, which in turn contributed to a diminution of the power of the state (a trend that rapidly gathered momentum

during the 90s). Developing countries suffered increasing poverty, exclusion, and inequality. There was something of a crisis in development thinking, associated with the removal of socialist trajectories from academic and political development agendas (Satg'e de Ric, 2004). Figure 2.4 explained by the Ellis and Biggs depicts this decadal shift.

**Figure 2.4 The Narratives of the Livelihood and Idea of Sustainable Livelihood Approach**



Source: Adapted from Ellis and Biggs, from Satg'e de Ric (2001)



## **2.9- Sustainable Livelihood Approach (SLA)**

Livelihood security is the ability of a household to meet its essential needs. These needs include adequate food, health, and shelter, minimal levels of income, elementary education, and community participation. Livelihoods are secure when households have secure ownership of, or access to, resources (both tangible and intangible) and income earning activities, including reserves and assets, to off-set risks, ease shocks, and meet contingencies popularly known as ‘Sustainable Livelihood Model’(Chambers, 1988). A livelihood is said to be sustainable, when it has potential to cope with, and recover from, stresses and shocks and maintain or enhance its assets and capabilities while not undermining the existing resource base (Antony, 2009; Nagarajan, 2006; Twigg, 2001).

Sustainable livelihood is a way of thinking about the objectives, scope, and priorities for development, in order to enhance progress in poverty elimination. SLA aims to help poor people achieve lasting improvements against the indicators of poverty that they define. The premise is that the effectiveness of development activity can be improved through systematic-but manageable-analysis of poverty and its causes; taking a wider and better informed view of the opportunities for development activity, their likely impact and ‘fit’ with livelihood priorities; and placing people and the priorities, they define firmly at the centre of analysis and objective-setting (Caroline & Diana, 1999).

The core principles of the SLA are given in below:

### Figure 2.5 - DFID's Core Sustainable Livelihood Principles

Poverty-focused development activity should be:

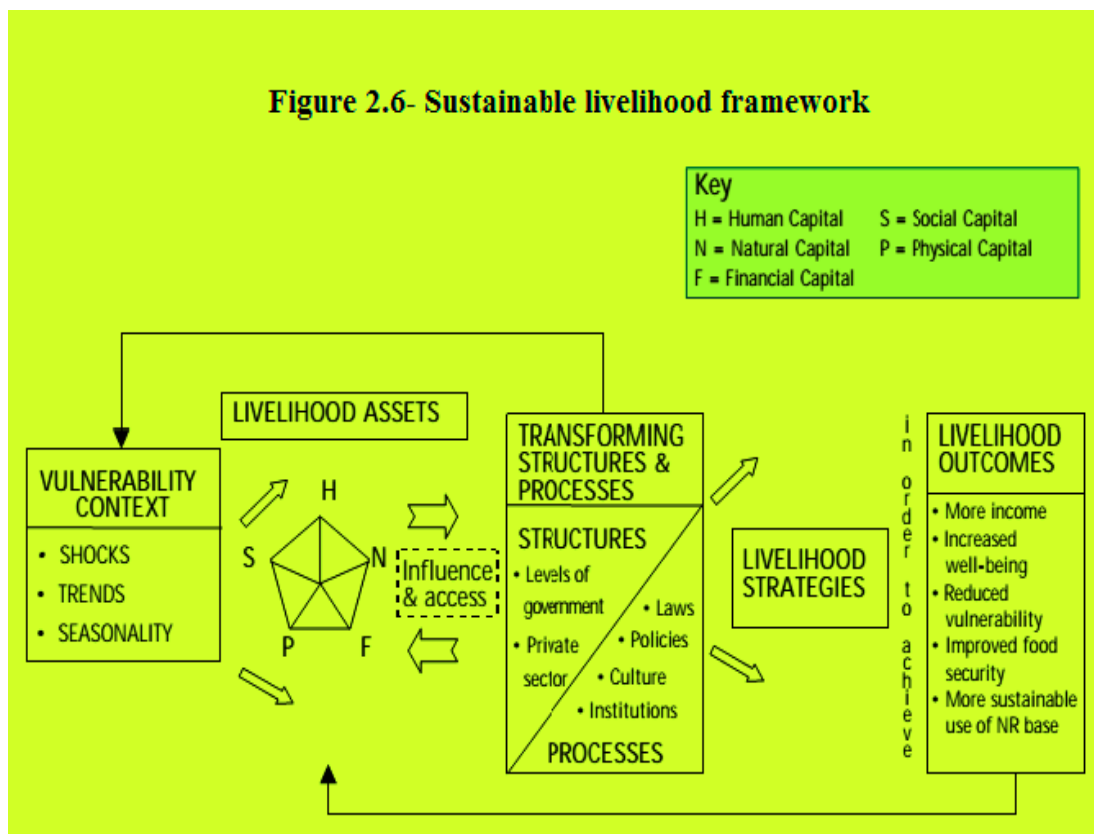
- ❖ **People- Centered:** Sustainable poverty elimination will be achieved only if external support focuses on what matters to people, understands the difference between groups of people, and works with them in a way that is congruent with their current livelihood strategies, social environment, and ability to adapt.
- ❖ **Responsive and Participatory:** Poor people themselves must be key actors in identifying and addressing livelihood priorities. Outsiders need processes that enable them to listen and respond to the poor.
- ❖ **Multi-Level:** Poverty elimination is an enormous challenge that will only be overcome by working at multiple levels, ensuring that micro-level activity informs the development of policy and an effective enabling environment, and that macro-level structures and processes support people to build upon their own strengths.
- ❖ **Conducted in partnership:** With both the public and the private sector.
- ❖ **Sustainable:** There are four key dimensions to sustainability – economic, institutional, social and environmental sustainability. All are important – a balance must be found between them.
- ❖ **Dynamic:** External support must recognize the dynamic nature of livelihood strategies, respond flexibly to changes in people's situation, and develop longer term commitments.

SL approaches must be underpinned by a commitment to poverty eradication. Although they can, in theory, be applied to work with any stakeholder group, an implicit principle for DFID is that activities should be designed to maximize livelihood benefits for the poor.

**(taken from Ashley and Carney, 1999)**

In a number of ways, the sustainable livelihoods approach (SLA) was well aligned with its political and institutional context. Firstly, the SLA was in tune with wider shifts in approaches to development through the 1980s and 1990s; towards a focus on human well-being and sustainability rather than economic growth. Crystallized in the Brundtland Commission Report in 1987 and the first UNDP Human Development Report in 1990, NGOs and supportive researchers had negotiated this shift over the preceding decades. The new perspective was welcomed in the mid 1990s by *Department for International Development (DFID)* as it strove to redefine its role and mark the change of government in 1997 with a distinctive and timely approach to international development. The sustainable livelihoods approach succeeded in winning the attention of key policy-makers in donor institutions in the early 1990s, DFID in 1997 and the Natural Resources Department, away from the competing knowledge and theory which key individuals have been exposed to during the course of their careers. This attempt succeeded then because of the collision of two factors: a broad international climate which favored people centered approaches, and a specific need to mark out a new phase of development practice in DFID (Solesbury, 2003).

**Figure 2.6- Sustainable livelihood framework**



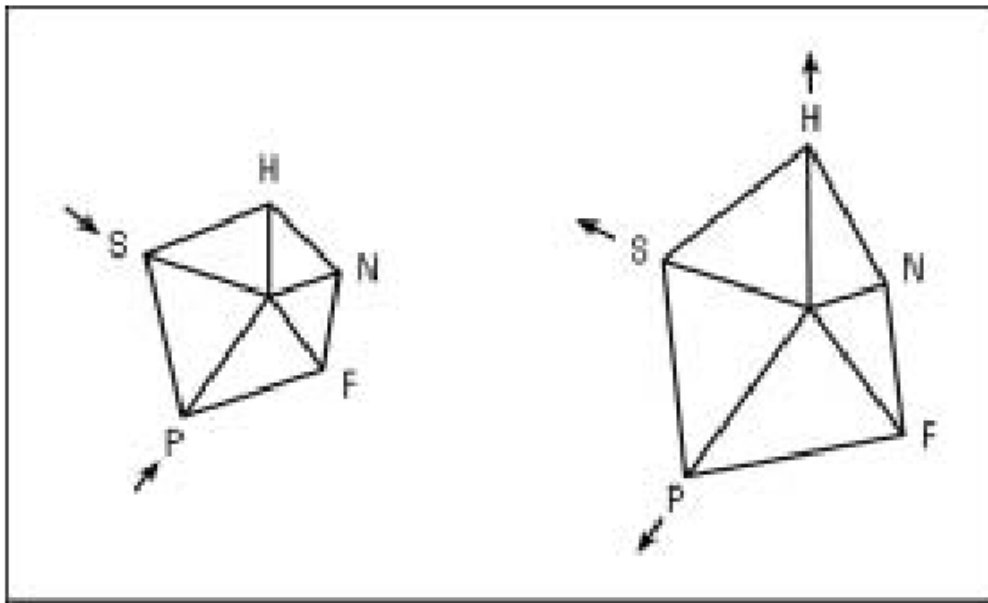
Source: Sustainable livelihoods framework, adopted from [www.ceciasia.org/utthan/sla.htm](http://www.ceciasia.org/utthan/sla.htm).

Figure 2.6 is a pictorial depiction of SLA, which is an instrument for the investigation of poor people's livelihoods, whilst visualizing the main factors of influence. Like all models, the SLA is a simplification and does not represent the full diversity and richness of livelihoods, which can only be understood by qualitative and participatory analysis at the local level (Kollmair and Gamper, 2002). In its simplest form, the framework depicts stakeholders as operating in a context of vulnerability, within which they have access to certain assets. These gain their meaning and value through the prevailing social, institutional and organizational environment (Transforming Structures and Processes). This context decisively influences the Livelihood Strategies that are open to people in pursuit of their self-defined beneficial Livelihood Outcomes. In other words, the framework provides a checklist of important issues and sketches which are linked to each other, while it draws special attention to core influences and processes and their multiple interactions in association to livelihoods (ibid).

### **2.9.1- Vulnerability Context**

The central feature of the approach is that it views people as operating in a context of vulnerability. This frames the external environment in which people exist and is responsible for many of the hardships faced by the world's poorest people. It comprises trends (i.e. demographic trends, resource trends, trends in governance), shocks (i.e. human, livestock or crop health shocks, natural hazards, like floods or earthquakes, economic shocks, conflicts in the form of national or international wars) and seasonality (i.e. seasonality of prices, products or employment opportunities) and represents the part of the framework that lies furthest outside stakeholder's control (Kollmair and Gamper, 2002). Not all trends and seasonality must be considered as negative; they can move in favorable directions, too. Trends in new technologies or seasonality of prices could be used as opportunities to secure livelihoods.

**Figure 2.7 Livelihood Assets**



Where **H**-Human Capital, **S**-Social Capital, **N**-Natural Capital, **P**-Physical Capital, **F**-Financial Capital

The first pentagon shows reasonable, but declining, access to physical capital and limited access to natural capital. Social capital is also falling. Perhaps the people whose livelihood assets are represented live in an urban area but do not have the skills or finance to invest in infrastructure maintenance. The decline of social capital also constrains their ability to form shared work groups. The lower pentagon shows the situation after support that has extended access to financial capital (perhaps through group-based microfinance schemes that also help build social capital) as well as providing skills and training (human capital). Together these enable the people to maintain and extend their physical capital. Access to natural capital remains unchanged (DFID, 2001).

### **2.9.2- Human Capital**

Human capital represents the skills, knowledge, ability to labour and good health that together enable people to pursue different livelihood strategies and achieve their livelihood objectives" (DFID, 2000). At the household level, it varies according to household size, skill levels, leadership potential, health status, etc.

### **2.9.3- Social Capital**

In the context of the SLA, it is taken to mean the social resources upon which people draw in seeking their livelihood outcomes, such as networks and connectedness, that increase people's trust and ability to cooperate or membership in more formalized groups and their systems of rules, norms and sanction.

### **2.9.4- Natural Capital**

Natural capital is the term used for the natural resource stocks from which resource flows and services (such as land, water, forests, air quality, erosion protection, biodiversity degree, and rate of change, etc.) useful for livelihoods are derived. Within the framework, a particularly close relationship exists between natural capital and the vulnerability context. Many of the devastating shocks for the livelihoods are natural processes that destroy natural capital (e.g. fires, floods, earthquakes).

### **2.9.5- Physical Capital**

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods, such as affordable transport, secure shelter and buildings, adequate water supply and sanitation, clean, affordable energy and access to information. Its influence on the sustainability of a livelihood system is best fit for representation through the notion of opportunity costs or 'trade-offs', as a poor infrastructure can preclude education, access to health services and income generation.

### **2.9.6- Financial Capital**

Financial capital denotes the financial resources that people use to achieve their livelihood objectives and it comprises the important availability of cash or equivalent, which enables people to adopt different livelihood strategies. Two main sources of financial capital can be identified:

- a. **Available stocks** comprising cash, bank deposits, or liquid assets such as livestock and jewellery, not having liabilities attached and usually independent on third parties.

- b. **Regular in-flows of money** comprising labour income, pensions, or other transfers from the state, and remittances, which are mostly dependent on others and need to be reliable.

Among the five categories of assets, financial capital is probably the most versatile as it can be converted into other types of capital or it can be used for direct achievement of livelihood outcomes (e.g. purchasing of food to reduce food insecurity). However, it tends to be the asset that is least available for the poor. Reddy (2013) in her work in post tsunami Andaman and Nicobar Islands probed various questions related to livelihoods hitherto unattended such as; what is the impact of flood on the livelihood of people? What kind of employment had been given so far? What kind of training for capacity building for skilled employment was given?

In order to understand the rehabilitation process for revival of livelihoods in the post disaster situation, it is important for us to know different perspectives from which livelihoods can be understood and what kind of interventions are required to revive sustainable livelihood. The sustainable livelihood approach emerges as an important and widely used approach that attempts to cover wide aspects of livelihood in the situation of disaster as well. This work employs this framework to look at the various aspects of livelihood in the region under recurrent floods. It seeks to understand the limitations and benefits of this framework to understand not just the situation of livelihood but also differential impact of recurrent disaster on it.

## **2.10- Coping Strategies and Livelihood during Disaster**

Floods, drought, earthquake, cyclone, etc are common phenomenon and continue to plague the mankind even in recent times. Coterminous to this is the history of institutional arrangements of redressal to mitigate the damages due to disasters. For example, in the middle Loire valley some major flood embankments are over 200 years old and the courses of the Rivers Rhine and Danube were substantially straightened before 1900 providing improved navigation and flood control. In Hungary, there is documentary evidence of flood defense works as early as the 13<sup>th</sup> Century and in the UK flood defense legislation can be traced back to 1531 and so on (Samuels, 2010). Most of the efforts culminated in distributing relief measures such as food and shelter to the affected population, or disbursing aid in forms of

monetary compensation. The earliest intervention plans were not comprehensive and greater attention was paid to post disaster coping and recovery.

Around the turn of the last decade, ‘the Yokohama message emanating from the International Decade for Natural Disaster Reduction 1994 underlined the need for an emphatic shift in the strategy for disaster mitigation’ (Disaster Management in India, 2011). It was increasingly realized that while hazards, both natural or otherwise, are inevitable, the disasters that follow need not be so and the society can be prepared to cope with them effectively whenever they occur. It called for a “multi-pronged strategy for total risk management, comprising prevention, preparedness, response and recovery, on the one hand, and for initiating development efforts aimed towards risk reduction and mitigation, on the other and hence mobilized the need for “sustainable development.” The concern for sustainable development prompted on minimizing risk of destruction and casualties associated with different disasters through prevention and mitigation measures. Mitigation is generally categorised into two main types of activities which are structural and non-structural. Structural mitigation refers to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant protective structures and infrastructure. While nonstructural mitigation measures refer to policies, awareness, knowledge development, public commitment, and methods and operating practices, including participatory mechanisms and the provision of information, which can reduce risk with related impacts. This shift in approach (from coping to prevention and mitigation) brought a sea change in the existing discourse and ‘livelihood’ assumed special significance in prevention and mitigation measures (Disaster Management in India, 2011).

### **2.10.1 Community Based Mechanisms**

In flood situation, conventional knowledge about the event is most important for the coping strategy and resilience. An effective public awareness programme can contribute a great deal to reducing disaster-related losses. When developing such a programme, it is important that the seriousness of the risk is accurately perceived and that information be communicated with the appropriate level of urgency. In addition, risk communication should be viewed as a continuous process, where the contents of the message should be continuously reviewed and improved. It can only



happen with the formal and informal mode of education (UNISDR 2002). In this manner, the flood education has become important for the community.

Paton (2006) suggests that “*A community flood education program should therefore be designed to not only raise awareness but also focus on the other psychological factors (including barriers) that convert people to preparedness. Furthermore, to assist in building flood resilient communities, flood education should not just focus on preparedness, it should also relate to other components of resilience such as adaptive systems and competencies.*” He (Paton et al, 2006a) identifies ‘critical awareness’ as one of the sequence of components that determine a person’s adoption of a protective action. A community flood education program should therefore be designed to not only raise awareness but also focus on the other psychological factors (including barriers) that convert people to preparedness, risk perception and coping strategy. Webber and Dufty (2008) identified the following as the functions of flood education in the new approach in Australia.

- a-** Preparedness conversion- learning related to commencing and maintaining preparations for flooding.
- b-** Mitigation behaviors- learning and putting into practice the appropriate actions for before, during and after a flood.
- c-** Adaptive capability- learning how to change and maintain adaptive systems (e.g. warning systems) and build community competencies to help minimize the impacts of flooding.
- d-** Post-flood learnings- learning how to improve preparedness levels, mitigation behaviors and adaptive capability after a flood.

Goulter & Myska (1987) argued that if a flood occurs relatively soon after another damaging flood then the second flood warning would be quite effective as the flood plain dwellers would be well acquainted with the effectiveness of response actions. Any educational programs initiated immediately following the first flood would also contribute to the success of the response actions. Many non-technical people, however, carry a false interpretation of probability known as the 'gamblers' fallacy'.

These days most of the researches show that programmes and training for the community focus on the idea of disaster resilience, so they mention about the community participation and indigenous knowledge for the disaster preparedness.

After disaster, physiological impact of the disaster is the one of the major problems in the community. Raphael D. ((1993) cited in Editorial American Journal of public health) defines psychological responses and said that psychological responses are influenced by many factors: the extent of destruction and loss for individuals and the community, the meaning of the disaster to the population, and the short and long-term consequences for the population. Children, especially young ones, are particularly affected by the emotional reactions of their parents and by separation from family either during or after the disaster.

The impact of disaster also varies across biological age and every age group have different adopting strategy and they are having different position in different situation, he again explains that ‘Yet the popular view that older adults experience greater disaster stress because of the physical effects it manifests rests on the underlying assumption that they are incapable of protecting themselves’ (Shenk Dena, et al 2009). Older people being weak and vulnerable group possess fewer and more rigid resources for coping with traumatic events than younger persons. At the same time, older people are more resilient, with better potential for adjustment to a traumatic experience than younger sufferers. Elderly may appear to be susceptible at first instance, nevertheless the strength and resilience that aged people might bring to the disaster experience based on a lifetime of experiences must not be downplayed. Based on the lifetime of experience that older adults bring to their disaster experience, their special needs and coping styles need to be addressed in disaster planning and recovery.

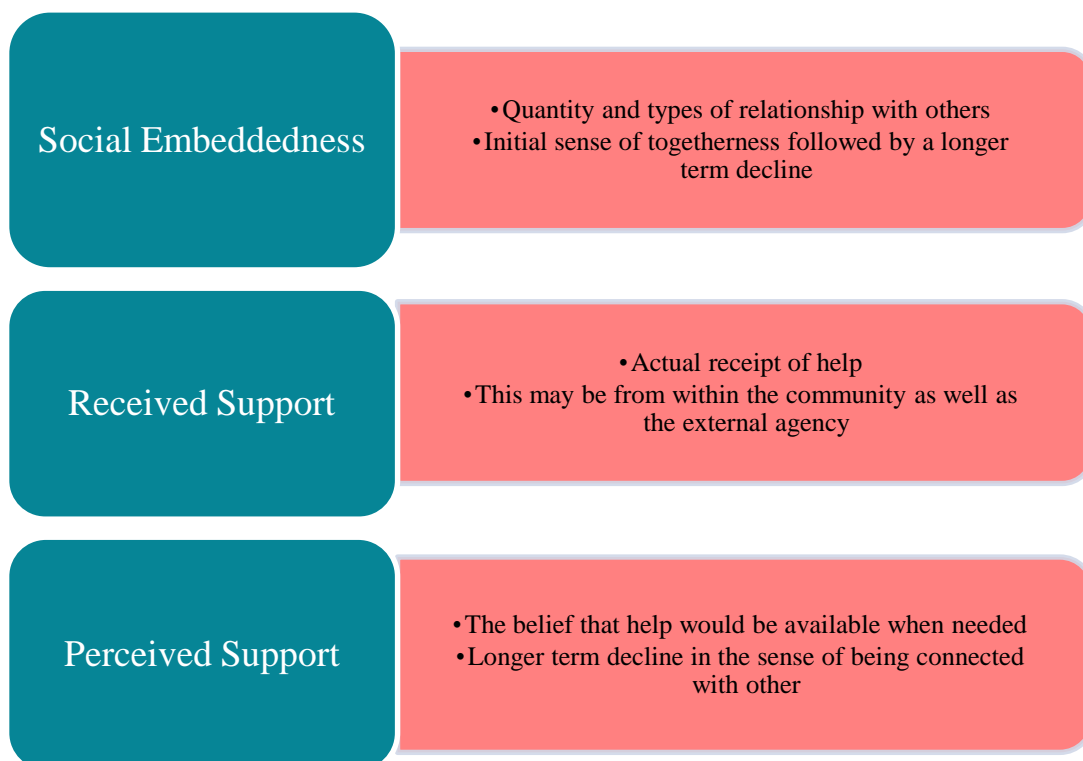
### **2.10.2- Social Support**

Disaster sufferers tend to rely primarily on their indigenous support networks called social networks for coping and resilience post disaster. Social networks are key social units that respond to disasters (Kreps, 1984). This network is a buffer against hazards and protects the individual. There is also a lot of formalized aid offered by government and relief agencies especially in the affluent regions of the world. The pattern of help receipt post natural disasters could be better represented as a pyramid with its broad foundation being helped from family, followed by support from other primary support groups such as friends, neighbors, and local religious

congregations, and its narrow top being the aid provided by formal agencies and professional services (Kaniasty & Norris, 2004).

Social support refers to social interactions that provide individuals with actual assistance and embeds them into a web of social relationships perceived to be loving, caring, and readily available in times of need. This definition imbibes within itself three major facets of Social Support: social embeddedness (quantity and types of relationships with others), received support (actual receipt of help), and perceived support (the belief that help would be available if needed) (Kaniasty & Norris, 2004). In short, perceived support refers to helping behavior that might happen, received support refers to helping behavior that does happen, and social embeddedness represents the most basic structural component from which these functional components emerge.

**Figure 2.8: Social Support and Post Disaster Dynamics**



Source: Kaniasty & Norris, 2004

Social Support is an important predictor of coping and resilience post disaster. It influences the rumination and the coping behaviors of the individuals. Gonzalez de la Rocha (1991), Lomnitz (1977), Reyes Morales (1994), and Velez-Ibanez (1983) have all described how the Mexican poor use family and other close relationships to

mobilize resources in their struggles to overcome some of the vicissitudes inherent in poverty and political disenfranchisement (Norris et al., 2005). Social Support is directly proportional to the strength of the social networks. It depends on individual interaction and kinship network. Further, supportive social networks are often cited as a buffer against stress (Realmuto, Wagner & Bartholow, 1991; Pittman & Lloyd, 1997; Brewin, Andrewin, & Valentine, 2000, 2000; Karanci & Acarturk 2005). In their study with the survivors of the Yugoslavia war, Rosner et al. (2003) found that being a member of a group was a predictor of growth. The opportunity of membership may provide for sharing trauma history, worldview, and collective coping strategies with each other. Thus, Social Support seems to be an important facilitator of growth (Tedeschi, Park, & Calhoun, 1998). To summarize, higher the level of community participation, more is the Social Support and greater is the likelihood of developing successful coping skills (Perry, 1983).

Social Support is very complex and follows a cyclic pattern. Initially, there is a strong mobilization of helping behavior (in the domain of received Social Support; Kaniasty & Norris, 1995) but later there have been often a deterioration of perceived social support and social embeddedness better known as ‘Social Support Deterioration’ model proposed and tested by Kaniasty and Norris (Norris et al., 2005). Many things can lead to post disaster declines in social support and social functioning (Kaniasty & Norris, 2004). Since disasters affect entire indigenous networks, the need for support may simply exceed its availability, causing expectations of support to be violated. Further, relocation and job loss and even death following the most severe events remove important others from sufferers’ supportive environments. Disaster sufferers often abandon routine social activities, leaving fewer opportunities for companionship and leisure. Social networks become saturated with stories of and feelings about the event and may escape interacting. Whereas sufferers want and need to be listened to, they and others in their social environments may not necessarily wish to be the listeners. Physical fatigue, emotional irritability, and scarcity of resources increase the potential for interpersonal conflict and social withdrawal. Thus, fairly soon, mutual helping and cohesion yield to strife and disharmony, the mobilization of support yields to deterioration of support. Eventually, however, it is assumed that perceptions of Social Support “bounce back” to pre-event levels as the community and individuals

recover. The deterioration of Social Support appears to occur at multiple levels ranging from intimate dyads to family and friendship networks to entire communities (Norris et al., 2005).

The role of community knowledge and social support becomes especially important in a society that is together facing recurrent disaster. The recurrent floods in this case while making the affected population vulnerable also enable them with knowledge and local tools which help them fight against the disaster. The social support in such a society also assumes a different role. The questions now emerge as to the nature of mechanisms that the community affected by recurrent floods has developed. What are the ways in which this local knowledge is incorporated in to the planning and policy making of the state? It also becomes important to know about the nature of social support that emerges in the case of seasonal floods in the affected community and if it acquires any of the forms mentioned in the social support framework by Kaniasty and Norris.

### **2.10.3- State Response to Disaster**

#### **2.10.3.1- Disaster Management in India**

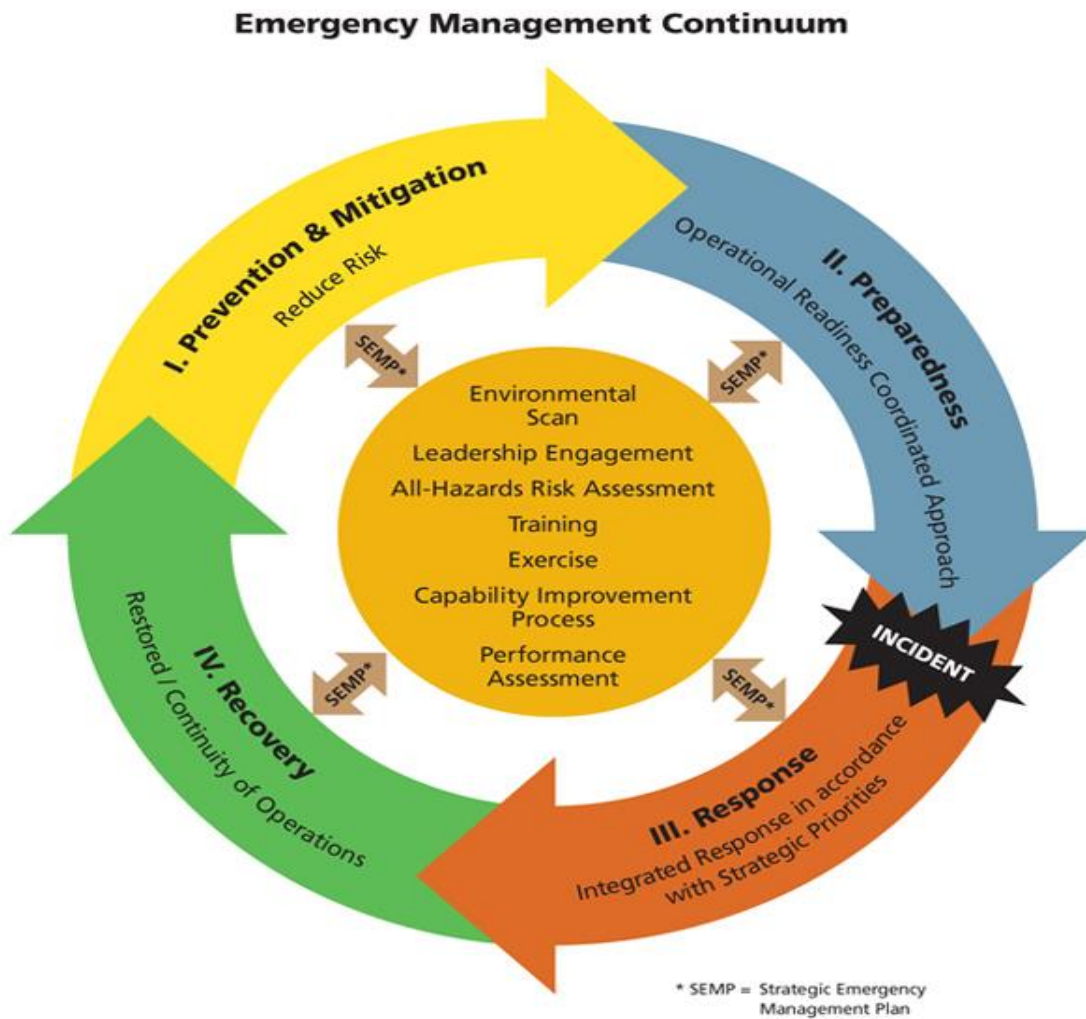
Most nations have institutional and physical infrastructure to combat floods and their effects, and in many cases these have a long history. Indian permanent and institutional disaster management system was born long back in the decade of 1990s with the formation of a disaster management cell under the Ministry of Agriculture, following the declaration of the decade of 1990 as the 'International decade for Natural Disaster Reduction' (IDNDR) by the UN General assembly. Following series of disasters such as Latur earthquake (1993), Malpa landslide (1994), Orissa Super cyclone (1999) and Bhuj Earthquake (2001), a high powered Committee under the Chairmanship of Mr. J. C. Pant, Secretary, and Ministry of Agriculture was constituted for drawing up a systematic, comprehensive and holistic plan for addressing the disasters in the country. Later, the disaster management division was shifted under the Ministry of Home Affairs in 2002 and a permanent, hierarchal structure for disaster management in the country came into existence (Ministry of Home Affairs, 2011).

Although not specifically addressed in the Five Year Plan documents in the past, the Government of India has a long history of using funds from the Plan for mitigating

natural disasters. Funds were provided under Plan schemes i.e., various schemes of Government of India, such as for drinking water, employment generation, inputs for agriculture and flood control measures, etc. There were also facilities for rescheduling short-term loans taken for agriculture purposes upon certification by the District/State administration. Central Government's assets/ infrastructure were to be repaired / rectified by the respective Ministry/Department of Government of India. Besides this, at the occurrence of a calamity of great magnitude, funds flow from donors, both local and international, for relief and rehabilitation, and in few cases for long-term preparedness/ preventive measures (Disaster Management in India, 2011:74). However, the permanent and institutionalized body devoted to the management of disasters came into being with the National Disaster Management Act, 2005.

Disaster Management Act (2005) provides for the effective management of disasters in the country. It recommends institutional mechanisms for drawing up and monitoring the implementation of the disaster management. The Act also ensures measures by the various wings of the Government for prevention and mitigation of disasters and prompts response to any disaster situation in the country. After Disaster Management Act 2005, India also follows the disaster management continuums which are widely used in world scenario. This is a cycle process to prevent the disasters in the country. The process has response, recovery, prevention and mitigation and then after preparedness. This is paradigm shift in disaster planning; before this approach disaster management had response centric approach, which has been converted in cyclic manner since 2005.

**Figure -2.9 Disaster management continuums**



Source: National Policy on Disaster Management, 2009: 7

The Act provides for setting up of a three tier hierarchical structure, the National Disaster Management Authority (NDMA) under the Chairmanship of the Prime Minister, the State Disaster Management Authorities (SDMA) under the Chairmanship of the Chief Ministers, and the District Disaster Management Authorities (DDMAs) under the Chairmanship of Collectors/District Magistrates/Deputy Commissioners. The Act further provides for the constitution of different Executive Committees at national and state levels. Under its aegis, the National Institute of Disaster Management (NIDM) for capacity building and National Disaster Response Force (NDRF) for response purpose have been set up. It also mandates the concerned Ministries and Departments to draw up their own plans

in accordance with the National Plan. The Act also had mandates for financial provisions for the creation of funds for response, National Disaster Mitigation Fund and similar funds at the state and district levels for the purpose of disaster management. The Act also provides specific roles to local bodies in disaster management. With the enactment of the 73<sup>rd</sup> and 74<sup>th</sup> Amendments to the constitution and emergence of local self-government, both rural and urban, as important tiers of governance, the role of local authorities has become very important.

#### **2.10.3.1.1- National Disaster Management Authority**

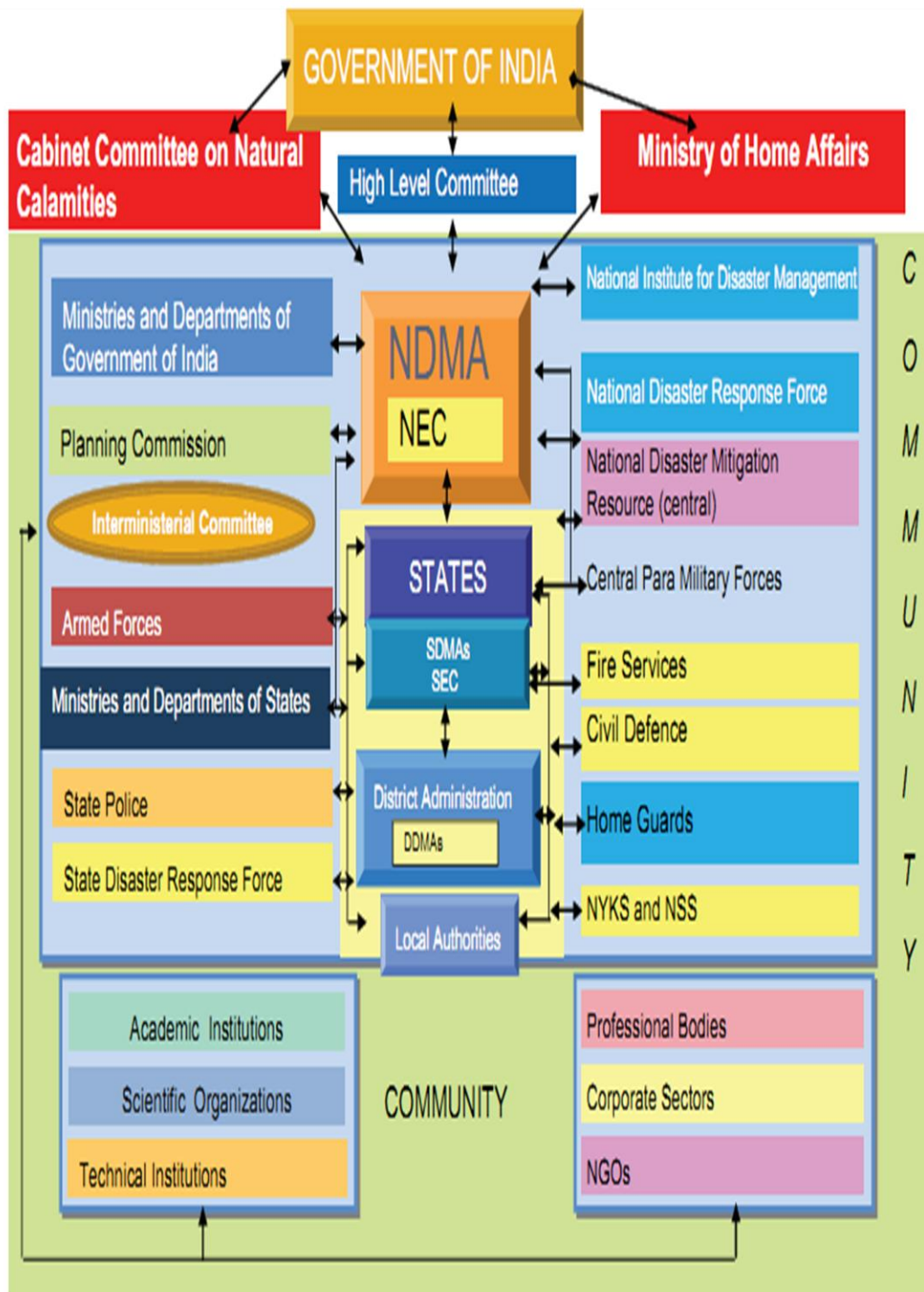
The National Disaster Management Authority (NDMA) was initially constituted on May 30, 2005 under the Chairmanship of Prime Minister via an executive order. Following enactment of the Disaster Management Act, 2005, the NDMA was formally constituted in accordance with Section-3(1) of the Act on 27th September, 2006 with Prime Minister as its Chairperson and nine other members, and one such member to be designated as Vice-Chairperson. Its primary responsibility is the formulation of the policies on disaster management and guidelines for the disaster risk reduction. It also has to supervise the State Disaster Management Authorities in the prevention and mitigation of the disasters. Further, its task is to draw plans and measures for the management of disasters (Ministry of Home Affairs 2011).

#### **2.10.3.1.2- Role of the NDMA as the first body of the National Disaster Management Authority (NDMA)**

As the chief precursor of the disaster management in the country, the NDMA has several functions. Its primary function is that of policy formulation. It is entrusted with formulation of national policies on disaster management in the country. In this process, it has the prime responsibility to devise national plan to combat disasters. NDMA thus acts as the federal body and supervises the plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan for the mitigation and prevention of disasters in the country. It is also endowed with the responsibility to formulate the guidelines to be followed by the State Authorities in drawing up the State plans. Figure 2.10 depicts the structure of disaster management body in India.



**Figure 2.10 the National Disaster Management Body in India**



Source: Ministry of Home Affairs New Delhi 2011:56

In addition, it has to formulate the policy guidelines to be followed by different Ministries or Departments of the Government of India for the purpose of integrating

the measures for prevention of disaster or the mitigation of its effects, in their development plans and projects. It also acts as the referral body between the legislative and the executive body of the NDMA i.e. coordination of the enforcement and implementation of the policy and plan for disaster management throughout the country. It regulates the provision of funds for the purpose of mitigation and is responsible for the dispersion of the grants for disaster control in the country. In case of emergencies outside the country, NDMA is expected to support other victim countries affected by major disasters as per the National policy mandates. Further, it is responsible for the prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with the threatening disaster situation or disaster as it may consider necessary.

#### **2.10.3.1.3- State Disaster Management Authority (SDMA)**

The Disaster Management Act, 2005 provides for the constitution of SDMAs and DDMA in all the states and union territories in the country. It is responsible for the prevention and mitigation of the disasters at the state level. Its primary task is to pursue the policies and guideline of the NDMA for the disaster risk reduction in the state. The Act also provides for the constitution of the State Executive Committee (SEC) under Section 20 of the Act, to be headed by the Chief Secretary of the state government with four other secretaries of such departments as the state government may think fit. Its task is to monitor and coordinate the implementation of the National Policy, the National Plan and the State Plan as provided under Section 22 of the Act.

#### **2.10.3.1.4- District Disaster Management Authority (DDMA)**

DDMA is the chief executive body of the NDMA working at the ground level. It is headed by the District Magistrate/ District Collector/Deputy Commissioner as a Chairperson. An elected representative of the local authority is present as co-chairperson except in the tribal areas where the Chief Executive Member of the District Council of Autonomous District is designated as co-chairperson. Further in the districts, where Zila Parishad exists, its Chairperson shall be the co-chairperson of DDMA. The CEO of the District Authority, Superintendent of Police, Chief Medical Officer of the District and other two district level officers designated by the state governments are also its members. The District Authority is responsible for

planning, coordination and implementation of disaster management and to take such measures for disaster management as provided in the guidelines. It has the directive to examine the construction in any area in the district to enforce the safety standards and also to arrange for relief measures and respond to the disaster at the district level.

The response of the state in terms of management and policy implementation is to be examined in the field of recurrent floods in this work. It seeks to look at that various gaps and discrepancies that emerge in both the policy framework and implementation on the field.

### **2.11 Summarising the Review**

In the exhaustive review of the literature discussed above, there are several perspectives and approaches of understanding livelihood and vulnerability that emerge before us. We have seen that in the case of livelihood, it is defined in terms of assets which are natural, social, human, physical and financial capital. Most of the literature has focused on livelihood as poverty reduction and economic development. The basic unit of production, household, is the important site of livelihood management. A household is vulnerable to a disaster in various ways. A household that has a lower income and therefore cannot afford resources is more vulnerable than other households. The household is also vulnerable by several barriers such as that of culture, gender, religion, age and poverty level. The households that are dependent on agriculture and related activities for livelihood are also vulnerable to the change in seasons as we have seen. A rural household differs from an urban household in its access to resources. A differently abled person is vulnerable to disaster more than a non- differently abled person.

Gender is also an important component as it emerges in the literature review which impacts the vulnerability of a large section of the population during a disaster. Lack of control over decision making and freedom of movement outside prescribed territories prove detrimental in mitigating the impact of disaster. Women are significantly absent from most decision making bodies at all levels. We have also noticed in the literature review that in the flood situation, public awareness programme contributes to reducing the disaster induced losses. An acknowledgement of the various social hierarchies prevalent in society with regard

to the impact of disaster can prove crucial to a more effective implementation of public awareness programme and other policies.

In the literature review, we have also looked at the notion of social support that gains importance after a disaster. Disaster disrupts the presence of indigenous networks that provide support to each other during need. It has been argued that social support mechanisms must be strengthened in order to provide not just material but emotional and psychological needs. Concentrating on the various livelihood approaches, we have seen that the focus for most approaches remains on the poverty reduction. Other crucial factors are ignored. A recent attempt to highlight the foundational aspects that might determine the development of livelihood in a disaster hit area has been discussed through the ‘sustainable livelihood approach’. It takes cognizance of the various vulnerabilities that exist and impact the livelihood options and opportunities and works in relation with the social and institutional context of a region. The review also discusses the role of state managed bodies in the prevention and mitigation of disaster. The situation of the ground in the case of recurrent floods shall bring out challenges to the frameworks, policies and implementation by these bodies. In the next chapter, we move on to discussing and elaborating on the study area where the various questions raised in the review are to be explained and analyzed.

## CHAPTER – 3

### CONCEPTUALISATION AND METHOD OF THE STUDY

#### 3.1 Conceptualisation

The disasters that cause massive destruction in the state of Uttar Pradesh are the floods, droughts, fire and earthquakes. Loss of life and property from these disasters, especially the former three, is in terms of hundreds of crores of rupees annually. Considerable efforts are made every year, both by the government and the public, to mitigate the losses encountered during a disaster. In the year 2016, the state of Uttar Pradesh witnessed massive destruction caused due to the floods. Lasting in the months of July and August, the floods affected the areas of Barabanki, Amroha, Kushinagar, Pilibhit, Lakhimpur Kheri, Basti, Bahraich, Ghaziabad, Jalaun, Varanasi, Ghazipur, Allahabad and Ballia. The flood level crossed the danger level of 106.7 to 106.44 metres in some of the areas. By the end of August 2016, the number of fatalities in the region of Eastern Uttar Pradesh, Bundelkhad and Terai, was 43 deaths. The number of affected people were 870000 and 43 buildings were destroyed (Davies, 2016).

In Uttar Pradesh, recurrent flood is the most infamous calamity that causes massive destruction in several districts. Recurring natural disasters in the state of Uttar Pradesh over the years have been causing severe damage and adversely affecting human, plant and animal life, property and environment. It not just incurs losses but also halts development. Recurring floods, droughts and fires have been pointers to the increased vulnerabilities and inadequacy of the various sporadic mitigation measures attempted. The emerging context is an increase in frequency of disasters, their escalating cost, rising levels of vulnerability, narrowing differences between natural & manmade disasters amidst an increasingly fragile environment. The areas affected by recurrent floods are years behind the areas unaffected in terms of development and infrastructure. In Uttar Pradesh, the district under severe impact of recurrent floods is the Siddhartha Nagar district. Several areas under the district face floods every year in the monsoon period. Within this district, this study focuses on the village Neerpur which is a part of Jogia block and Naugarh Tehsil in Siddhartha Nagar district.

Floods have a detrimental impact on the economy of the village. It destroys the chief source of livelihood in the rural areas as water logging and inundation destroy the agricultural crops crippling the resource base of the inhabitants. Loss of crops implies loss of food grains and income of the inhabitants. In this scenario the livelihood studies assume special significance as the disasters not only disrupt the entire livelihood activities but also destroy the asset base of the affected population. Firstly, flood destroys the food crops which lead to the economic loss as well as the loss of employment opportunities. Further, loss of food crop leads to the low yield which means less grain for domestic consumption. In poor households, with low resources, less grain implies shortage of food, which may often lead to starvation. Loss of food crops leads to the decline in agricultural income, which is a major resource base in rural places. Thus, there is a decline in income of the household. A flood leads to the destruction of the environment, primarily agricultural fields.

Water logging and inundation leaves the fields unfit for farming, thus farmers have to wait for the retreat of the flood waters which causes time loss and delay in cultivation. Delayed cultivation does not yield optimum output as by the time, the crop reaches the market, the prices decline and the farmers have to incur losses on the input. Also, delayed farming disturbs the crop cycle. Further, floods give rise to lack of employment options giving rise to the problem of unemployment in the village. One of the major impacts of recurrent floods is large scale migration of young men from the village to the nearby cities in search of employment. They migrate to the city during the period of monsoon floods and work as daily wage laborers. As we shall see later, some of them earn merely enough for their survival and are unable to provide back to their families in village. Women headed households in the village affected by recurrent floods have to struggle against the floods and livelihood security.

The livelihood approach in this sense becomes of prime importance in the case of recurrent disaster. Initially, livelihood was equated with the losses incurred during disasters. Gradually, it was realized that the affected population used different resources: tangible as well as non tangible to reduce susceptibility to risk as well as coping and recovery post disasters. These resources technically conceptualized as livelihood assets or capital, were deemed to be effective in mitigating losses due to disasters. For example, households use their financial assets and savings to help

cope during crisis. While experience, an important non tangible component that people acquire over the years through exposure also enables people to find out ways to create and recreate against all odds and challenging situations. A hallmark of the livelihood approach is its emphasis on the capabilities of the residents based on productive activities or those that generate cash and non-cash income-activities such as agriculture, wage labor, or craft production that ‘put food on the table’ and generate potentially tradable goods and services and reproductive activities or those that perpetuate the survival of the productive unit i.e., household maintenance functions such as childcare, cooking and cleaning. The key to sustainable development lies in effectively capitalizing and the effective use of different types of capital (financial, physical, natural, social and human) and different livelihood strategies for sustenance during disasters such as floods or droughts. And a livelihood is said to be sustainable, when it has potential to cope with, and recover from, stresses and shocks and maintain or enhance its assets and capabilities, while not undermining the existing resource base.

Another important feature in this discourse is that of the public health. When we look at public health in connection with the livelihood, it is established that public health has a collective perspective in addressing health as a feature of society rather than the individual. This is particularly important as an individual and his attributes are a reflection of interplay of various influences from the society and his environment. Thus, we can understand public health as collective, organized efforts by society towards promotive, preventive and curative health with the understanding of social, economic, political and environmental factors. The nature of public health is multidisciplinary and livelihood is one the most important aspects of individual and community health. Livelihood which is a wider part of economy and day to day life leads to all kind of important strategies to set priorities in the household.

This work aims to examine the livelihood strategies in the field of recurrent floods through the Sustainable livelihood model. It looks at the various ways in which people build their human, physical, financial, social and natural capital in the face of recurrent floods. Apart from the formal employment, it looks at the various assets and capabilities that people have. It also analyses the strengths and limitations of this model in the case of recurrent disaster. It examines the challenges that the

region affected by recurrent flood pose to the understanding of livelihood elaborated in the sustainable livelihood model.

What is equally important is to note that the impact of flood is not a homogeneous one. The flood disaster in any particular area influences particular people according to their location in the social structures of the region. These social identities play an important and overwhelming role in the lives of the population. In the Indian context, the social identities of caste and gender determine one's standing in the society. These identities become a crucial factor of one's vulnerability and strengths in the society. In the case of recurrent floods, the vulnerability of the affected population therefore undergoes layers of differentiated vulnerability depending on one's social identity. The impact of flood varies on the basis of one's gender and caste location. The lower castes and women have restricted access to resources in the region. A hierarchy of authority is maintained when it comes to decision taking and participation in public affairs. It becomes crucial to look at the differential impact of the recurrent floods vis-à-vis the social identities existing in the region. Such an approach partly separates and widens the scope from just the geographical variations in the effects of a disaster. This goes into the study of the community specific impact varying on the basis of caste, class, gender and age. These institutions not just control the impact but also to a large extent the prevention, mitigation and rehabilitation programs in a disaster hit area. An important approach which underscores the spatial dimensions of social and economic stratification in increasing the susceptibility to hazards due to disasters is the social vulnerability approach (Hewitt, 1998).

This work focuses on the differential impact faced by the lower castes and women in the region affected by recurrent floods. It looks at the variations within these identities and their vulnerabilities. It studies the social, political and economic scenario in the village vis-à-vis the caste and gender location in recurrent floods. It also attempts to look at the structural discrimination that occurs to the lower castes by looking at indicators such as the location of the houses of the lower castes, access to safer places for lower castes and women; and presence of lower caste and women in various spheres of decision making. This work aims to bring out the specific narrations of women and lower caste people during recurrent floods which talk



about going beyond representation in decision taking spheres to actual policy decisions that impact them.

The response of the government in the form of planning strategy and policy implementation is the major step in dealing with the situation of disaster. In India, National Disaster Management Act 2005 focuses on a cyclic process of disaster management beginning with preparedness response, prevention and mitigation. The Disaster Management Act (2005) provides for the effective management of disasters in the country. It recommends institutional mechanisms for drawing up and monitoring the implementation of the disaster management. The Act also ensures measures by the various wings of the government for prevention and mitigation of disasters and prompt responses to any disaster situation in the country. The Act provides for setting up of a three tier hierarchical structure- the National Disaster Management Authority (NDMA) at the national level, the State Disaster Management Authorities (SDMA) at the state level and the District Disaster Management Authorities (DDMAs) at the district level. The importance of this Act increases manifold with the recurrent occurrences of disasters in the country.

At the broader level, this research seeks to explain the various lacunas that exist in the plan and policies manifested in the field. India became a signatory to Sendai Framework (2015) in 2015. It has been incorporated in the National Disaster Management Plan, 2016. Through this micro study in the village under recurrent disaster, one looks at the differences that emerge between the policy on paper and its implementation on the field. It tries to look at the functioning of the local authorities responsible for the disaster management. It tries to look at the outlook of the people towards the management authority and vice-versa. It also seeks to analyse the conception of livelihood used in the policy in disaster management.

The field of recurrent floods offers many challenges to the existing notions of disaster, livelihood development, vulnerability and disaster management. The understanding of disaster is linked to the idea that it lacks predictability. It is shocking and sudden. In such a case recurrent floods become an interesting area, which helps us widen the scope and notions of the disaster. The vulnerability of the affected population is significantly shaped by the social and economic indicators. In the case of recurrent disaster, these indicators also often work in unpredictable forms. Recurrent floods, owing to its repeatability, may not dismantle the

community from its social hierarchies. Further, the livelihood opportunities and strategies in the field of recurrent floods are also crucial. The framework adopted in this work to understand the livelihood strategies of the people is the ‘Sustainable livelihood model’. The framework goes beyond the income- based ideas of livelihood and focuses on capabilities and assets of the people. This broader approach of understanding livelihood enables this research to deconstruct the livelihood strategies of people battling recurrent disasters. It also leads us to understand the way in which the state authority is responding to the efforts of prevention, mitigation and control of disasters. In the case of recurrent disaster, this work enables to understand the relationship between the state authorities and the affected people. The research attempts to look into detail the various nexuses that form and function in the field of recurrent disaster when it comes to policy implementation. The relevance of this study cannot be highlighted more in the face of the unending saga of recurrent floods every year and the rising number of fatalities and destruction. With this conceptualization, the next section elaborates on the method adopted for this study.

### **3.2 Research Questions**

With this, the researcher tries to find out all the important questions which are directly and indirectly related to livelihood issue in the flood prone area.

- 1- What is the impact of recurrent flood on the livelihoods of the affected people?
- 2- Is there any difference of impact of flood on the specific communities with special reference to caste, class, gender and age?
- 3- Do existing social categories in the literature have their applicability in the field or does the field offers new challenges or complexities which we need to address in the study?
- 4- What are the coping strategies, resilience and response that have been used by the community for maintaining the livelihoods?
- 5- Are the general universal models of dealing with the livelihood issues, accepted by the prominent institutions, address the concerns of the field?

- 6- How does the state respond to the flood phenomenon of floods in the recurrent form?

### **3.3 Broad Objective**

The broad objective of this study is to understand the implications of the recurrent floods on the issues of livelihoods and the response of the state in and after the disaster specific to the selected region.

### **3.4 Objectives**

The specific objectives of the current study are delineated below:

- a. To examine the outcome of flood on livelihoods in the Siddartha Nagar district.
- b. To explore the differential outcomes of flood hazard within the stratified social structure (class, caste, gender, age) over the years.
- c. Analyze the community response and resilience strategies for their livelihoods under the recurrent floods.
- d. Critically examine the state response in disaster management and various policy measures undertaken by the government.

### **3.5 Research Design**

The aim in research design is to align the pursuit of a research goal with the practical considerations and limitations of the project (Mouton & Marais, 1990). In aligning with the broader objectives of the study, it deemed feasible to resort to a qualitative study as “qualitative research provides richness and holism with strong potential for revealing complexity” (Chaulagai, 2009:29). As discussed earlier, social science understanding of disaster is new to India, and there exists limited literature to depend upon particularly livelihood issues vis-à-vis disaster has not been adequately dealt with. Thus, it deemed fit to embark upon the analytical research design for the purpose of the given study. The work employs the ethnographic method to research the questions in the field.

In his book, ‘Doing Ethnographic Research’ Grills (1998), argues that among one of the questions addressed by the ethnographic research, a major question is that of the perspective. It makes sense of the perception of the people towards their world

(Grills, 1998). The society that is affected by the recurrent floods is significantly different from that which is not vulnerable to frequent disasters. The floods become a part of their lives. It begins to dominate their concerns, priorities, strategies and outlook towards lives. It impacts their relationships amongst themselves and outside. The ethnographic design is important to enter into and look at this domain of the affected people.

The second question according to Grills that the ethnographic research helps in finding out is about the way relationships are maintained, established and ended. He argues, 'To assert that human group life is relational is to attend to the various associations, collectives, partnerships, loyalties, and joint ventures that people undertake with one another' (ibid). In the case of recurrent disaster, the field throws up different equations between caste groups, women and men, amongst women of different caste groups, representatives of the village and state authorities, the affected people and people belonging to other areas. The recurrent floods, being a dominant part of their social and economic lives, impact these relationships. As it shall be highlighted later, the people in the flood affected village faced difficulties in finding marriage proposals for their sons and daughters because of the stigma attached to the village. The flood, in this way and many other, determines to a great extent the relationships between various segments of the affected society. The ethnographic research method helps in understanding this aspect in the field.

A third question that according to Grills is that the ethnographic research attempts to explain is with the nuances of social action taken by the actors. It helps in understanding the relevant context and the social action adopted (ibid). The complexities of the recurrent disaster and its implications on the lives of the people impacted produces actions and decisions that are best captured through ethnographic research. The intricacy of the actions taken by the local authorities in the implementation of the plans and the understanding that informs those decisions is an important subject of study. Ethnographic research helps in understanding the particular actions taken and not others by the people in the recurrent disaster. For example, it is difficult to understand why people choose to stay in the village in the face of massive difficulties in the flood prone region instead of moving out. The ethnographic research provides a glimpse into the life world of the people and their various choices challenges in adverse situation.

### **3.6 Sampling Design**

The field area, Siddartha Nagar, for this research has been selected as it is a district which is one of the most underdeveloped districts of the state of Uttar Pradesh. Due to its geographical location, it is prone to recurrent floods. It is covered by the rivers- Rapti, Budhi Rapti, Banganga, Kuda and Ghoghi that flood the district during the monsoon period every year. To understand the consequences of recurrent floods, Siddartha Nagar district is best suited. Affected households in the village Neerpur were selected through the cluster sampling technique. The first criterion of selecting the household was the caste identity. It was followed by the gender identity and age group of the respondents. These three criteria were adopted because they provided the broad social categories required for the research objectives. Data was collected from the head of the family. The first preference was given to the older member (male or female) in the house hold, and if older member was not available then the next head in the family was considered.

### **3.7 Data Collection Process**

#### **3.7.1- First Phase (The pilot study)**

The research was conducted in two phases. In the first phase, it was important to build rapport with the people so that they could help in sharing the information. The pilot study was conducted in the months of December in the year, 2012 and May to July in the year, 2013. It is also important to ensure that fair and honest information be shared with the researcher by the villagers. The people who played as the informants are mentioned here by their pseudonyms to maintain the privacy of the people. The Lekhpal of the village, Prem Prakash Yadav (name changed), was approached by the researcher who was working in the district for the last 20 years and had been working in the village for past two years. This person was also important not just because he was helping the researcher in rapport building but also because he is at the bottom of the ladder in District Disaster Management Authority structure and therefore is a key figure in implementing the programs and policies during disaster. The researcher explained the purpose of the research and convinced him that the research is for academic purpose. He agreed and willingly helped the researcher and made the necessary arrangements. He exposed the researcher to areas and people who were important for this study. He also introduced me to the major

key informants in the village such as the Sarpanch, the representative of the Sarpanch, Auxilliary Nursing and Midwife (ANM), primary teacher and other important people in the village.

In this phase, the researcher conducted a household survey for seeking information on the basic demographic details such as the number of members in the household, gender, age and education status, migration, caste status, landholding and occupation. The researcher also met some of the villagers in the usual social settings such as the tea stall and tobacco shop. Initially, the researcher realized that the villagers were inhibited by the presence of the former and hesitated to interact because they perceived the researcher to be a police investigator in civil dress. This misunderstanding owed to the fact of some illegal liquor business being run in the village. The misunderstanding was cleared by the Lekhpal who assured the people that the researcher was a scholar who needed their help for academic purpose and will submit the work to the university only.

The data collected also helped in understanding the vulnerability during a disaster and locating the population affected in the village and the community. The researcher was also able to take cognizance of the hazard and the damages caused by the floods in the current as well as the past years. In- depth interviews were conducted with major informants in the field such as Lekhpal, sub- divisional magistrate, panchayat representative, ex- sarpanch and a local political leader. The researcher also observed details of the process dealing of floods and the challenges faced by the villagers and the responses of the structures available. This helped the researcher to frame a broad overview of the field and its nature.

### **3.7.2 Social Mapping of the Area**

In the first phase, the researcher also conducted the social mapping of the village with the help of the key informants. They gave valuable insights in drawing the details of the village. The demographic detailing of the village had included information regarding the caste- wise distribution of the population mainly in categories of general, OBC and SC, sex- wise distribution and the age wise distribution of the people. In the social mapping, the information was sought on details of the topography of the village, the occurrence of flood, its frequency and its distribution in various parts of the village. An occupational mapping of the village

was also done which was subsequently divided into primary and secondary occupations. The researcher also gathered information about the land use pattern in the village in which agricultural land, non agricultural but fallow land, household pattern, market and school were located and identified by the researcher.

Therefore, in this first phase or the pilot study, the researcher was able to set forth some key steps in the process of the research. A rapport was established with the key informants and some of the villagers. Substantial information was collected on the demographic and social details of the village. It helped the researcher in identifying the details of the field. The information regarding the floods, the nature of the hazard, the vulnerability of the population and the role of the government personnel during the disaster was shared with the researcher in the first phase of the research process.

### **3.7.3 Pre-Testing of the Tool**

An interview schedule was prepared which had questions, in both open ended and close ended forms. The language of the interview schedule was Hindi and English. It was first tested among a small group of the people to know the utility and feasibility of the questions. Based on the primary feedback, subsequent modifications were made in the interview schedule. Some questions were removed and some others were added.

### **3.7.4- Second Phase**

The second phase of the research was the main study which had an interview schedule with detailed questions. The field work was conducted in several parts. The first part was undertaken from May to June in 2014. The second part was conducted from July to September in 2014. The third part was conducted from February to March in 2015. A final field visit was done after working on the first draft of the work in June in 2016, to fill the gaps of any information left and clarify some points.

### **3.7.5- In- Depth Study**

Several tools and technology were used in this study as the ethnographic method was used. It included in- depth interviews, group discussions, observations, case studies and narrative documentation. For the detailed and better insights in the issue, observation at every stage was undertaken by the researcher. A lot of times, individuals gathered for group discussions. At times, it was attempted by the

researcher to convert the group discussion into focused group discussions. In group discussion, the researcher was able to look at the various perspectives of the people. Since, the group consisted of people belonging to same age group; it was possible to know the perception of people belonging to a particular age group on the same event. Similarly, women in groups also talked about the same event and other variants and shared their information with the researcher. It was useful for the researcher as group discussion brought different individuals together and helped in cross verification of the information they shared individually. A lot of times, the key informants were also part of the groups, talking about the floods and related issues. It helped the researcher to verify the information that the informants had shared with the researcher. Another important feature of the group discussion with the key informants as the part of them, was the understanding or the relation shared by the villagers with the people of political and administrative power. It opened up several new perspectives for the researcher with regard to the study.

### **3.7.6- Conducting the Interview**

The interviews that were conducted by the researcher for the purpose of this study were in the form of semi- structured interview. A semi- structured interview may be defined as an “interview whose purpose is to obtain descriptions of the interviewee’s life world with respect to interpreting the meaning of the described phenomenon” (Bohl, 2010: 22). The researcher was able to accommodate the personal experiences and insights of the people through the liberties offered by the semi- structured interview. The differences that one experiences as belonging to a particular caste and gender, which went unaddressed in the group discussion sometimes, were highlighted and enforced in the semi- structured interview. In the lack of standard scales and instruments, the semi- structured interviews proved as a useful tool. The interview was conducted with different stakeholders, key informants and other villagers.

### **3.7.7 The Key Informants**

In the second phase of the research process, the key informants were approached again by the researcher. The key informants for the study, the Lekhpal, Sub- District Magistrate, the primary teacher, the representative of the sarpanch, a political leader and ex- sarpanch helped the researcher readily. They shared their information,



experiences and opinions with the researcher. Most of these people were working in the village for over ten years in different political and administrative positions. They have witnessed the floods and the situation of the village for a very long time. Owing to their rich experience, they had substantial and rich information to dispense with the researcher. At the Primary health Center, the pharmacist helped the researcher in forming key insights with regard to the concepts of public health and related challenges. At the village level, ASHA and ANM also enriched the researcher with their insights on the condition of women during floods. They also acted as a bridge between the women of the village and the researcher. All these people had interesting insights over the whole issue which they willingly shared with the researcher.

### **3.7.8- Secondary Data**

The secondary data was collected from the Jawaharlal Nehru University library in New Delhi, Giri Institute of Development Studies library in Lucknow, Uttar Pradesh, University of Allahabad library in Allahabad, Uttar Pradesh and National Institute of Disaster Management library in New Delhi. Apart from these libraries, the researcher also procured data from District Disaster Management Office, District Agriculture Office, and Tehsil Office in Siddharthanagar district. The researcher also sought information through RTIs. Another major source of secondary data was the archives, sought from State archives of Uttar Pradesh in Lucknow. Some of the information was also fetched from the web portals on disaster at district level, state level, and national level and at global forums. Various journals, newspapers, official reports, records and unpublished works were also explored and the researcher for the information on the subject.

The keywords used to locate secondary data on the subject were disaster and livelihood, disaster and vulnerability, floods and livelihood, disasters in India, livelihood in Uttar Pradesh, floods in Uttar Pradesh, social support and disaster, gender and disaster, children during disaster, agriculture and floods, institutions and disaster management, and policy and disaster management. Among the international journals that were consulted were *Natural Hazards*, *Disasters*, *Disaster Prevention and Management*, *Annual Review of Sociology*, *The Journal of Educational Research*, *Ecological Economics*, *American Journal of Community Psychology*, *Indian Emergency Journal Sociological Forum*, *Environmental Management*,

*Disaster and Development and Economic and Political Review*. Several other articles were collected from journals by *Sage, Emerald Insight, Oxford, Science Direct, Springer and Taylor and Francis*. Several reports published by national and international organisations like *United Nations Office for Disaster Risk Reduction, Disasters, United Nations International Strategy for Disaster Reduction (UNISDR), SAARC Disaster Management Center (SDMC), International Federation of Red Cross and Red Crescent Societies, National Disaster Management Authority (NDMA), National Institute of Disaster Management (NIDM)* were also considered.

### **3.8- Ethical Considerations**

Disaster victims frequently suffer from psychological and emotional distress bearing signs of acute anxiety, depression, post traumatic stress, and severe forms of grief (Boyd Webb, 2004; Myers & Wee, 2005; Roberts, 2005; Newman et al., 2006; North et al., 2012 cited in Ferreira, 2015). These emotional factors combined with the additional stress of the possibility of permanent dislocation, social disruption, strains on family life and financial implications, concerns about the environment, and ecological stress, can cause participants to be more vulnerable and hamper their ability to make informed decisions (Norris et al., 2006 cited in Ferreira et al, 2015).

The research was structured as per the approval of the Institutional Ethics Review Board (IERB) of Jawaharlal Nehru University. Facing and living with a disaster is a critical and sensitive issue for the person. Research among such persons involves questions of safety, well being and emotional sobriety of the interviewed and the family members. There are questions that may lead to secondary victimization among the persons especially if they belong to the marginalized groups such as women and lower castes. Although in the case of a recurrent disaster, people are found to be emotionally and materially immune to the kind of crisis a disaster may unleash, yet the researcher took care to be as sensitive as possible towards people's feelings and emotions. Keeping in mind these considerations, the researcher had adopted measures and precautions that were suitable for the interviewees. Prior to the interview, informed consent was taken from the persons verbally. They were also well informed of their rights to decline and walk out if they so desired. When the researcher sought written consent from the people in the village and the government officials, they declined completely. They hesitated about giving written consent because written word for them possessed legal and documentary power.

They wondered if written consent could lead them into any trouble. Some of them mentioned their previous experiences of written documents leading them into the troubles in procuring compensation after floods. The rumor against signing documents was too widespread in the village.

Due to the lack of literacy among women, most of them abstained from providing written consent. The participation of the informants was kept voluntary and they were informed about it. Researcher had not given any financial benefit for their participation. The informants were also informed about the subject and for their safety, the identity has been undisclosed in the work. Questions were framed in manner that were sensitive to the sufferer's trauma and were not probed beyond the latter's will. The questions that were declined by the interviewee were not taken up again. If, during the interview, the participant appeared to be uncomfortable or emotionally distraught, the interview was stopped. To keep the confidentiality clauses, the name of this village Neerpur is a pseudonym.

It was thus with these considerations, tools and methods that the researcher proceeded with the data gathering and analysis. The researcher took utmost attention to keep in mind the sensitivity of the informants. Some of the information was recorded with the permission of the interviewees. Photographs were also clicked for graphic description with the permission of the people.

## CHAPTER 4

### NEERPUR VILLAGE IN SIDDARTHANAGAR DISTRICT: A PROFILE

#### 4.1 Disasters in Uttar Pradesh (U.P.)

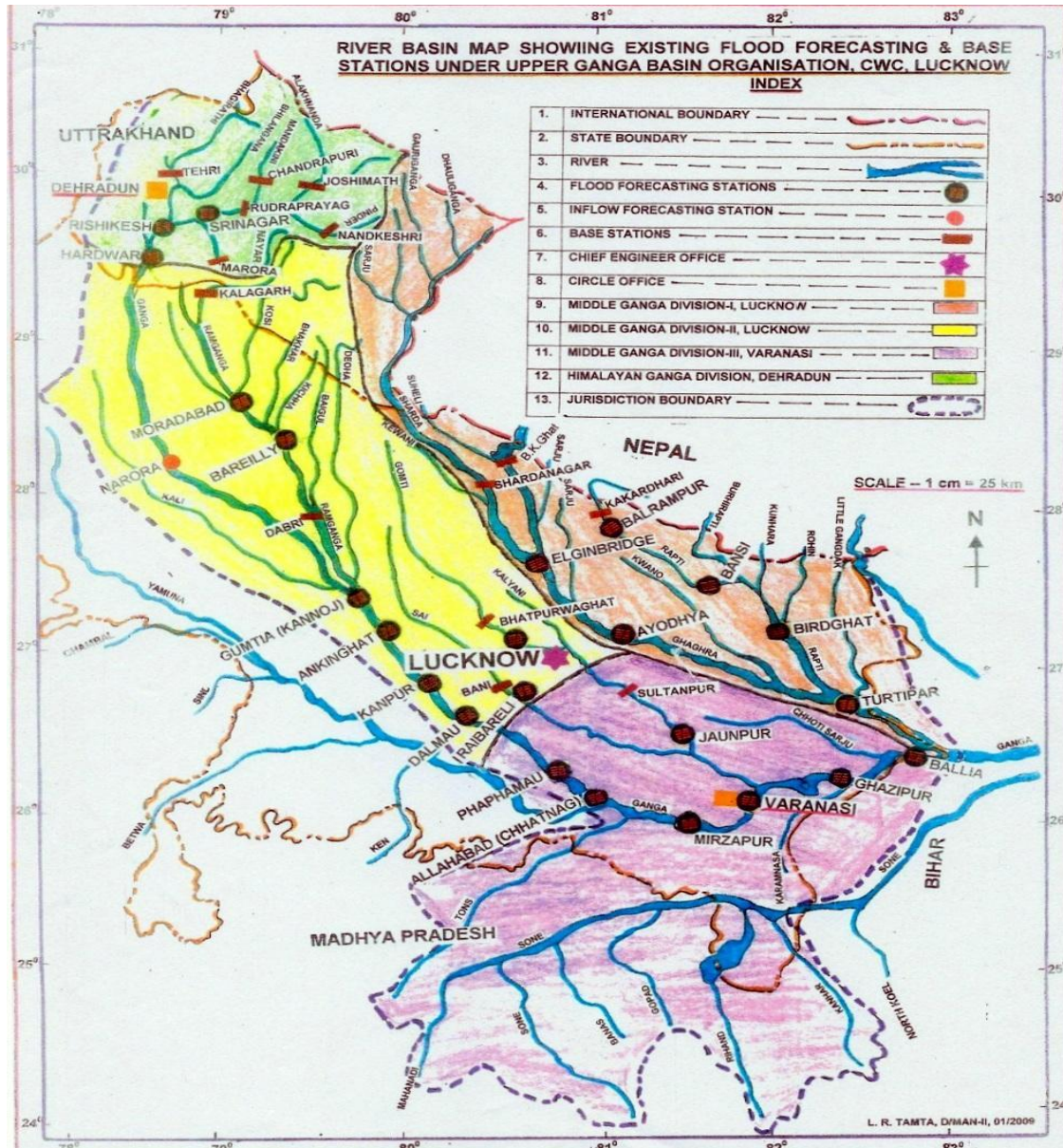
The total geographical area of Uttar Pradesh is 240.93 lakh hectares. The vulnerability of Uttar Pradesh against various disasters can be captured from the fact that approximately 27 lakh hectares are affected annually due to the floods. The approximate annual estimated loss due to floods is Rs. 432 crores. On the contrary, the recurrence period of highly deficient rainfall in East U.P. has been calculated to be 6 to 8 years whereas in West U.P. it is 10 years. The years 2002 and 2004 were particularly severe in terms of drought, with loss to crop, livestock and property assessed at Rs.7540 crores and Rs. 7292 crores respectively. The Terai belt districts of UP and entire districts of Saharanpur, Muzaffarnagar, Bagpat, Bijnor, Meerut, Ghaziabad, Gautambuddh Nagar, JP Nagar, Rampur, Moradabad, Bulandshahr in western UP are in the Earthquake High Damage Risk Zone-IV (ndma.gov.in). Thus, the people of Uttar Pradesh face extremes of floods, draughts.

#### 4.2 Floods in Uttar Pradesh

Uttar Pradesh (UP) is one of the most flood prone states in India. Out of the total geographical area, 43 lakh hectares every year are affected by heavy destruction as reported by the UP irrigation department. According to Rashtriya Barh Ayog or the 'National Commission on floods' in 1976, around 23.2% of the total flood prone area in the country is located in UP and the damages here are practically the highest in the country (Ministry of Water Resources, 2009). This comes in the catchment of rivers Ghaghra, Rapti, Rohni, Anmi, Sharda, Gomti, Tons, Sai, Narayna (Gandak) and Ganga etc. The region of Uttar Pradesh is located in the Indo-Gangetic plain. Ganga, Yamuna, and other perennial rivers along with their tributaries drain the land round the year accounting for high fertility of the soil in this region (Poorvanchal Gramin Vikas Sanstham, 2012). The state receives as much as 90% of its annual precipitation between June and September from south-west monsoon, rising from the Bay of Bengal. Average annual rainfall of 990 mm is received during June to September. The intensity of the monsoon decreases as it travels westwards and as such the Poorvanchal or the eastern part of the state receives more rainfall than the

western part. The rivers carry most of their discharges during this period of heavy and widespread rainfall.

**Figure 4.1- River Basin Map and Flood prone area in Uttar Pradesh**



Source: Bhad Prativedan Uttar Pradesh, 2008.

There are a total of eight river basins in the state of Uttar Pradesh. These are Gandak basin, Ganga, Ghaghara, Gomti, Ramganga, Rapti, Som and Yamuna river basins. The district of Siddarthanagar falls under the Rapti river basin.

Fertile soil accounts for high agricultural fecundity making it one of the leading states in food grain production and other crops. Monsoon is the time when the river overflows from their beds and causes destruction at a larger scale. Due to floods every year many lakh hectares of land is damaged and millions of population become vulnerable. It is the one of the significant states in terms of area and people in the country. It is situated in the northern part of India, and is the most populous state of the country. The total land area of the state is 240928 sq. kms divided into 75 districts, 820 blocks and 107452 villages. According to the Census of India (2011), the total population of the state is 199581477. The gender wise segregation amounts to 104596415 males and 94985062 females with the sex ratio of 908 as against the national standard being 940 (Provisional Census Data 2011, 2011). The total population density is 828 persons per sq. km which is much higher than the national average (382 persons per sq. km). So the affected population is more as compared to other places and the social and economical cost is also higher.

Heavy monsoon takes its toll on the carrying capacity of most of the rivers resulting in floods in several districts specifically in the eastern and central districts. Outpouring of water from the rivers in Nepal towards India also contributes to flooding in rivers of eastern UP. The recurrent and annual flooding in the major tributaries results in high seasonal water logging conditions. Due to flooding and subsequent water logging, a large area of productive lands turns into wasteland restricting crop growth in the kharif as well as Rabi season (Climate Profile of India, 2010). Table 4.1 below gives the losses incurred due to floods per year during 1973 to 2014 in UP.

**Table 4.1- Losses due to floods in Uttar Pradesh (1980-2014)**

Year	District	No of Affected (in Lakh )	Affected Population	Affected Villages	Affected Total Area (lakh hec.)	Affected Agricultural land	Affected Households	Life losses		Approximate loss INR Crore
								Human	Animal	
1980	46	303.47	44629	58.57	30.94	19.23	1309	5242	790.67	
1981	33	146.27	20706	29.91	16.35	4.91	427	1356	286.38	
1982	44	232.91	32459	55.38	33.09	10.18	562	2517	585.65	
1983	56	155.34	24713	38.36	24.99	5.16	519	2101	754.03	
1984	39	65.75	11500	16.68	0.31	0.83	209	432	26215	
1985	55	195.59	27113	40.28	24.19	6.20	804	3806	1216.26	
1986	45	59.19	8925	10.34	6.45	0.51	233	725	278.64	
1987	9	38.24	5807	5.81	3.16	1.80	163	990	186.14	
1988	46	182.04	24721	31.76	17.14	3.71	765	2102	134.68	
1989	25	48.62	8281	10.03	6.52	0.78	165	516	-	
1990	51	85.34	15524	22.03	10.64	1.32	471	2889	-	
1991	29	24.19	3372	8.10	2.10	0.78	214	369	-	
1992	20	29.24	4254	5.91	3.34	0.34	140	979	-	
1993	34	75.05	11765	15.11	7.91	1.37	314	2088	-	
1994	45	39.07	9627	9.86	5.98	0.66	317	4855	-	

1995	51	36.91	8874	12.79	7.98	0.88	321	1287	-
1996	44	72.20	8827	11.24	6.78	0.09	313	1232	-
1997	29	10.21	2284	3.49	1.55	0.03	102	144	-
1998	55	121.19	156118	25.23	14.15	3.84	1355	3384	-
1999	11	1.83	2.99	5.39	4.069	0.0049	17	9	-
2000	40	63.86	5882	7.84	4.724	0.0839	453	977	-
2001	21	27.15	3819	4.63	2.89	0.09	201	251	-
2002	14	3.86	770	1.10	0.62	0.0061	33	36	-
2003	54	134.80	17011	23.60	15.03	0.35	964	3201	-
2004	2	14.36	865	2.439	-	-	88	217	14.83
2005	35	24.511	3652	3.597	3.853	0.7732	203	259	357.23
2006	12	4.53	678				353	588	98.76
2007	23	26.53	758	8.49	5.66	0.34	272	170	519.88
2008	32	41.75	6287	4.988		6.30	889	1898	678.05
2009	15	20.38	1712	4.988			35	90	129.30
2010	44	53.76	6819	6.035			118	714	1013.78
2011	36	23.06	3587	5.25			729	249	1438.44
2012	15	6.38	1118	1.228			105	70	117.87
2013	40	35.44	5785	5.646			380	550	<b>3259.53</b>
2014	22	15.39	1895	4.72			104	199	754.32

Source: Bhad Prativedan Uttar Pradesh , 2008 & RTI Dated 20/09/2015.



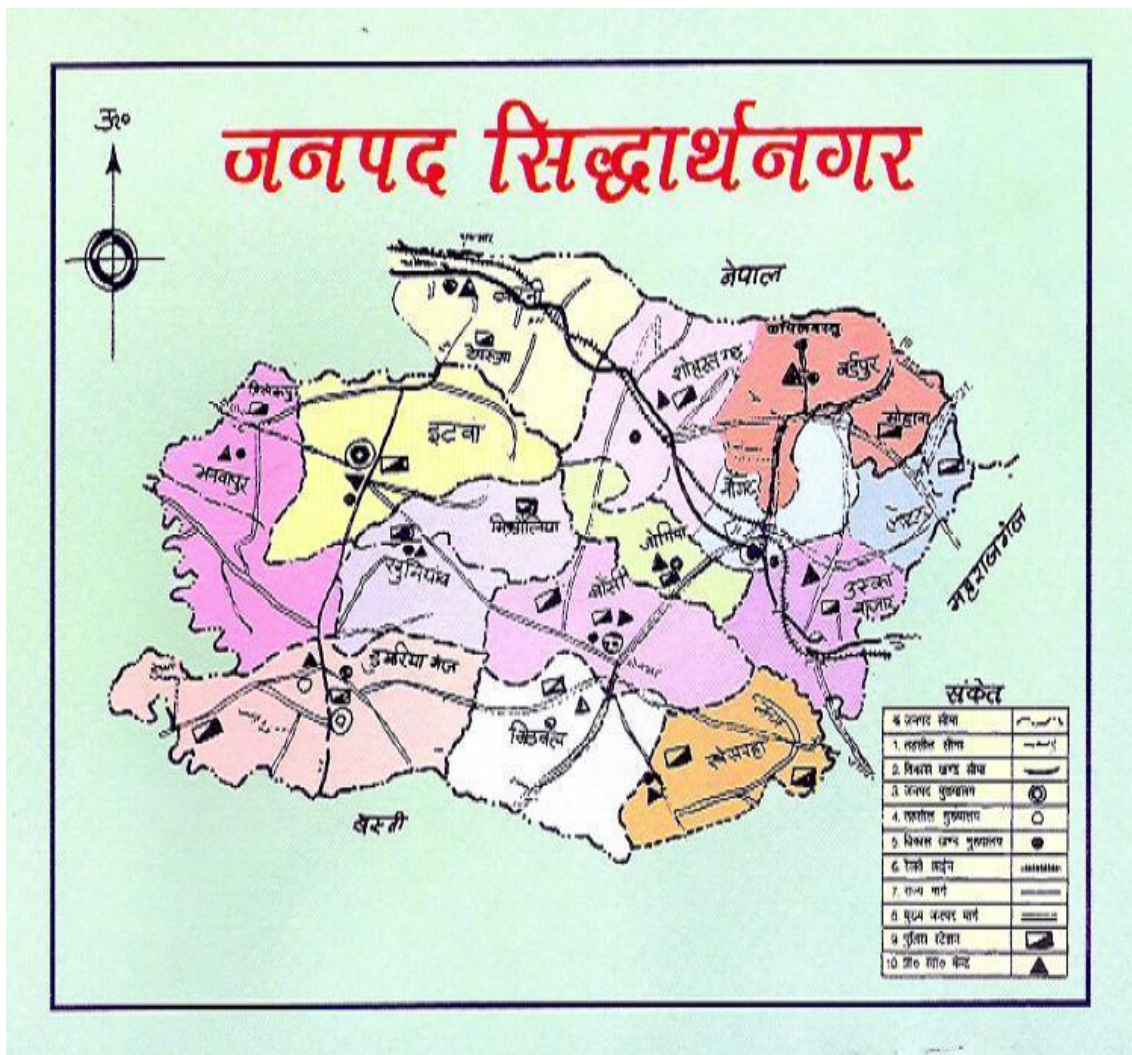
In the above data from table 4.1, we can clearly see that the number of districts affected by the floods directly affects the loss incurred due to the floods in Uttar Pradesh. In 2011, when thirty-six districts were under the impact of floods, the total loss ran into 1438.44 crores and in 2012, there were 15 districts that were facing the floods and had incurred 117.87 crores of losses. Similarly, in 2013, we find that under a massive flood in Uttar Pradesh, 40 districts were impacted which brought about a total of 3259.53 crores of loss while more recently in 2014, floods wreaked a havoc on 22 districts causing a loss of 754.32 crores. In the case of death toll among human beings, the number varies according to the extent of flood. However, despite being a recurrent riverine flood, the loss of human lives remains a consistent truth. Overall, floods are an annual recurrent reality that haunts the normal life of the people in Uttar Pradesh. Year after year, the consistency of disaster and the related losses and hazards have impacted the livelihood, livestock and health profile of the people.

#### **4.3 Floods in the Siddhartha Nagar District**

Among the several flood hit districts of Uttar Pradesh, the research was conducted in one of the flood prone regions in the district. The district of Siddhartha Nagar lies between 27°0'N and 27°28'N latitude and 82°45'E and 83°10'E longitudes. The district is bordered on the north by Nepal, on the east by Maharajganj district, on the south by Basti and Sant Kabir Nagar districts and on the west by Balrampur district. The district was carved out on December 29, 1988 by bifurcating Basti district. The district was named after prince Siddhartha, the pre-enlightenment name of lord Buddha as he spent his early years (till the age of 29 years) in Kapilvastu, which lies within the territory of this district. The district is known for the ruins of the ancient capital of the Shakyas Janapada, Kapilvastu at Piprahwa, which is located 22 kms away from the district headquarter, Naugarh. According to Census (2011) the area of Siddharth Nagar district was 2895 sq.km. The district falls in the Tarai belt of the state with Rapti, Budhi Rapti, Banganga, Kuda and Ghoghi as the major rivers. From the administrative point of view the district Siddhartha Nagar is divided into 5 tehsils, 14 development blocks, 1015 Gram Sabhas and 2314 inhabited villages. The district has 14 blocks, out of which 9 blocks are the most affected ones by the floods.

Further, there are 152 judicial panchayats and 999 grampanchayats. There are aggregate 2539 villages, which could be read as 2376 inhabited villages and 169 uninhabited villages (District disaster management, 2012). The rural areas are inhabited by 2393289 persons and the urban population is around 160237 persons. The sex ratio is 970 per 1000 males. The district fares well in literacy, total literacy being 61.81 percent which comes out to be 59.89 percent literacy in rural areas and 82.18 per cent in urban areas (Provisional Census Data 2011, 2011).

**Figure 4.2 District map of Siddhartha Nagar**



Source: <http://www.mapsofindia.co>

Due to its location in the Tarai belt, almost every year the district has to witness devastating and recurrent floods because of heavy rains in the Nepal hills. This has affected the economy of the district badly. Being a flood prone district and due to lack of proper drainage system, many of the blocks viz. Uska Bazar, Shohratgarh, Bansi, Jogia and Naugarh remain mostly waterlogged. The financial assistance received as floods relief invariably falls short of the need to compensate the actual losses suffered by the people. The river Rapti usually changes its course and displaces people and entire villages. There are a large number of lakes, ponds and other water bodies left behind to mark its changing course. These depositional and changing course characteristics of the river have resulted in huge inundation in the region during monsoons when rainfall increases the flow of these rivers overpowering their drainage capacity.

In the administrative records, the year 1998 is seen as witnessing “the worst floods of the century”. In that year, 2545 villages were affected with 1165909 numbers of people under the impact of floods. A total of 52 people and 481 animals died. The records state that the district did not witness much devastating floods in the years 1999, 2002, 2003, 2004, 2006 and 2011. However, the years 2000, 2005, 2007, 2008, 2009, 2010, 2012 and 2013 witnessed massive destruction wreaked by floods on the district. In the months of July and September in 2013, the tehsils of Naugarh, Shohratgarh, Bansi and Dumariyaganj were the worst affected (DDMA, 2016).

In 2012, in the month of September, there was an overflow of water from across the border in Nepal because of which the rivers Banganga, Gorghi, Rapti started flowing beyond the danger mark aggravating the flood situation in the region. The floods impacted 160 villages, 10223 hectare agricultural land and 69374 people. Two persons died in the floods then. In 2013, in the months of June and September, heavy rains had flooded the region in two cycles. A total of 224 villages, 27487 people and 17732 hectare of agricultural land were affected by the floods. Eleven people and eight animals died in the havoc (ibid).

We can clearly see that flood is a regular hazard creating disaster in Siddharthanagar district in Uttar Pradesh. In the everyday life of people, it has become a recurrent

reality. A large population is getting impacted by the floods every year. The vulnerabilities associated with the floods in the area have influenced and shaped the livelihood of the people also in a significant manner. A disaster event has become a certain or sure reality which has shaped their lifestyle and socio-economic structure in ways different than in other non- disaster impacted areas.

#### **4.4 – Floods in the village Neerpur**

Neerpur (pseudonym) is a small village in Jogia block of the Siddarthanagar district. It is 20 kilometers away from the Naugarh tehsil. It is located at the banks of River Budi Rapti that receives floods in the months of June and September due to heavy rains. The river surrounds the district from all four sides resembling an island. Due to its unique location vis-à-vis the river, the village is under the impact of floods for a longer duration even when the flow of water comes down. On one of the sides of the river, small dam has been constructed which prevents the outflow of water from the village.

##### **4.4.1-Social Profile of People in the Village**

The village is mainly dominated by people practicing the Hindu religion. People belonging to several castes are found in this village. According to the Gram Pradhan, there are 294 households in the village. Out of the total households, 140 families are of Sahni (boatmen) community (OBC), 120 families belong to Yadav (milkmen) community (OBC), 10 families of (washermen) community (SC), 10 households belong to chamar community (SC) and 14 families belong to Nain (barber) community (SC). There are no general and scheduled tribes communities in the village. The Yadavs are the dominant caste group in the village who has a major share in the landholding. The Yadavs and the Sahnis are politically strong castes which has polarized the OBC and SC communities. The village is very significant because of its location close to the river. It is also politically very active and engaged owing to its crucial location and role in several illegal businesses like manufacturing banned local liquor. Yadavs and Sahnis are numerically more in the village and therefore have a certain rivalry in terms of access to power. Both caste groups are well socialized in the state politics and contest against each other for political gain.

The society is dominated by patriarchal structures leaving no scope for women to participate outside the house. Interestingly, the village is a women reserved panchayat seat and is headed by a female gram pradhan but it was impossible for the researcher to talk to her as she was represented by her husband as proxy to outsiders.

#### **4.4.2- Household and Settlement Pattern**

As discussed before, the Yadavs and Sahnis are the two strong and numerically large caste groups in the village. They exercise control over major resources in the village such as land. Most of the fertile land in the village is under their ownership and also on a higher platform which is less vulnerable to floods. The other caste groups such as the Nains and Chamars have their land mostly in the flood prone region in the village. While economically deprived households could be found in all caste groups, the number of households varied. Among the Yadavs, the number of poorer households was lesser than among the Sahnis, Nains and the Chamars.

People who belong to lower class had kachha houses made up of dried mud and husk covered thatched roof. Their houses were also at a lower height and more prone to the floods. Their houses were built under the Central Government's Indira Awaas Yojna, especially for those belonging to SC community. Those who were relatively rich had pakka houses. However, as this researcher observed even their houses did not bear much strength. They had brick houses but not cemented or sometimes not painted. Their houses are located at the entrance of the village. Their access to the exit of the village is much easier.

#### **4.4.3- Civic Amenities and Facilities in the Village**

The village is quite underdeveloped and there is a serious lack of basic civic amenities in the village. According to the observations of this researcher, the existing infrastructure in the village is under serious decay. Important infrastructural facilities such as educational institutes, healthcare facility and roads are in a miserable condition.

The education in the village is in a pitiable condition due to the lack of attention paid to it in terms of ensuring adequate infrastructure. There are two primary schools in the study area with only two teachers for all classes. There are four "*shiksha mitra*" also

who help the teacher in teaching. *Shiksha Mitra* is the personnel having certain educational requirements serving as a resource person for teaching and maintenance of the schools in rural areas. They are meant to supplement the teachers and ensure positive child teacher ratio in the rural areas. There were a total of 154 students enrolled in the school. The teacher in the school was the sole person managing the duties of the principal also. There was no higher secondary school in the village. There was an attempt to open a private school in the village but it failed to provide quality education to the children.

There is no Intermediate college in Neerpur. The colleges are located in nearby areas of the district. Rais Ahmed Inter College is located at a distance of 45 kilometers from the village. A women's college, Srimati Yasoda Devi Pandey Kanya Inter College, is also located at a distance of 43 kilometers in the adjoining block.

#### **4.4.4- Medical Amenities in the Village**

The researcher observed that there is no hospital in the village and the closest Primary Health Center (PHC) is at a distance of five kilometers from the village in Tadiya Bazar. In the PHC, there is severe lack of infrastructure and attendants in the hospital. There is no doctor but only a pharmacist. Inside, there are two beds in dilapidated situation and the lab is non- functional. The villagers do not access the services in the center and prefer to go to the hospital in the city which is twenty- five kilometers away from the village. The PHC is thus rendered non- functional and out of use.

#### **4.4.5- Roads and Transport**

The researcher got to know that under the Pradhan Mantri Gram Sarak Yojna, a road has been built that leads to the village. However, it leads to only one particular area in the village and not all areas are accessible through the road. Some of the houses can be reached only through passing by the fields and others have a makeshift temporary road built to them. In terms of inner connectivity, the roads inside the village are in a very bad condition. It is difficult for a four- wheeled vehicle to travel inside.

People use their own bicycles and motorbikes for commuting between the city and the village. The public and private transport services are highly underdeveloped because of

the lack of any proper roads. It emerges as a major challenge for the villagers as it takes lot of time for people to commute between the villages. During the rainy season, in case of flooding, boats are used to help the affected people.

#### **4.4.6-Railways and Buses**

There is no railway station for the village. The nearest railway station is Uska Bazar railway station which is 23 kilometers from the village. Another station is Naugarh railway station which is located at a distance of 31 kilometers from the village. There is no direct train to Naugarh from Delhi, Allahabad and Kanpur. Most of the trains to Naugarh are from Lucknow and Gorakhpur only. The intercity Gorakhpur express commutes everyday from the two stations. The bus stations are also not to be found in the village. The nearby bus stops are Madanpur bus stop which is at a distance from 11 kms from the village, Uska Bazaar bus stop which is 11.3 kms and Pakdi bus stop which is 12 kms from the village.

#### **4.4.7- Electricity and Water Supply**

An informant, Ram Bihari (name changed) informed the researcher that the village has been recently electrified. The cemented poles are built to disseminate electricity for uses in households and in agriculture. Most of the households have an electric connection. There are some houses that do not have a connection. Interestingly, at very few of the places in the village the use of solar electric bulbs and switches can be seen. The Gram Panchayat has a bulb that runs with solar power and is used in the night. Some of the shopkeepers were found to be using solar switch boards. The local people could get their phones recharged from the shop by paying some amount. The villagers complained about the usual scarcity of the electricity in the area especially when the crops are to be irrigated.

The water supply is unsatisfactory. Mostly, Indian Mark handpumps are used to fetch water. Some of the better off households have their own handpumps while the poorer households do not. The local people have complained about the inadequate water supply. However, there is a lack of honest efforts from the side of the administration to look into the matter. The quality of the water that is served in the villages is also very poor. Most of the villagers are found to be suffering from waterborne diseases by the

doctors. During the floods, lack of safe and clean drinking water is a serious challenge that people face.

#### **4.4.8- Grocery Shops**

The researcher observed that there were no regular grocery shops that were present for all days in the village. Instead, on two fixed days of the week, Tuesday and Friday, a market was open in the village from where people could buy grocery and other products. Some of them went to sell their goods in the two day fair/ market. For all other things, they had to go to the city to buy. However village was subsistent in its economy and able to manage its everyday needs.

#### **4.4.9 Banks and ATMs**

The banks and ATMs are also not located inside the village but at a distance. The nearest bank and ATM is the Punjab National Bank which is around 13 kilometers from the village. A State Bank of India bank and ATM is situated 12 kilometers from the village in the next block. Rest of the banks and ATMs are located at a distance of more than 15 kilometers from the village.

#### **4.4.10 Miscellaneous**

The researcher observed that the nearest Cinema theatre from the village is 11 kilometers away from the village. There are several other theaters which are located at more than 15 kilometers from the village. The temples and other places of worship also are 8 to 10 kms from the Village. One cannot locate guest houses, lodges and hotels in about 12 kilometers in the vicinity of the village. Most of the hotels and lodges are in the adjoining blocks and tehsils.

### **4.5 Demographic and Economic Profile of the Village**

During floods the village Neerpur is surrounded by the river Rapti from all sides which gives it the resemblance of an island. Due to its unique geographical situation, the flood water from the river not just surrounds the entire village but also flows in, submerging a major part of the village. The shape of the district is in the shape of a bowl and the village is located in the low land. Due to this topographical constraint, during the floods the village remains submerged for a long duration.



Floods occupy a major segment of their routine in the entire year covering almost four months. Although floods last for four months in the village, the impact of the floods lasts longer and can be seen throughout the year. This impact can be gauged from the routine decisions of the people regarding social (schooling, marriage, medical etc) and economic (agriculture, investments etc) matters. In the case of sudden disasters, the impact of the disaster is more of a spectacle which catches attention because of its abnormality from an otherwise or hitherto normal situation. However, in the case of recurrent disaster, the impact is conspicuous. The impact of floods is most severe on the situation of livelihood opportunities available to the people in the village. It is well established that the economic stability is very important to mitigate the vulnerability against the disaster.

When flood is a recurrent phenomenon in the village, the economic stability is hard to achieve. To understand the effect of floods on the livelihood venues of the people in the village, it is important to understand the economic profile of the village. Following table 4.2 indicates the broad division of livelihood engagements of the people in the village. It also details out the number of days the household is engaged in a particular work and the income derived. The division of households according to the different livelihood as indicated in the following table is not a strict one as most of the households are engaged in more than one livelihood options

**Table 4.2: The division of households and livelihood venues**

<b>Main Activity</b>	<b>No of Households</b>	<b>Working Days (Range)</b>	<b>Month with High Income</b>	<b>Range of Annual Income</b>
<b>Farming</b>	144	90 -130 Days	March and April	30000- 80000
<b>Fishing</b>	36	65- 80 Days	August and September	30000- 60000
<b>Fish Mongering</b>	3	110 – 130 Days	August and September	50000- 100000

<b>Daily wage labor</b>	78	70- 90 Days	October and November	30000-50000
<b>Watchman</b>	1	160-180 Days	-	30000- 40000
<b>Teaching</b>	1	210 Days	-	40000-60000
<b>EntrepreneurShip</b>	11	365 Days	`	40000- 100000
<b>Livestock</b>	6	100-120 Days `	May and June	30000- 60000
<b>Boatman</b>	4	30- 40 Days	July and August	20000- 40000

*Source: data collected by researcher.*

According to the information collected by the researcher from the people in Neerpur, a large number of people are engaged in agriculture. The primary crops that are grown in the village are paddy, wheat, mustard, maize, jowar (sorghum), bajra (pearl millet), arhar (split pigeon peas) and potato. Paddy is the main crop that is grown in the village followed by wheat and mustard respectively. The crops of paddy and Bajra are sown in the months of November- December and harvested in March- April. The crops of wheat and mustard are sown in the period of October-November and reaped in March- April. Arhar takes a complete year to be fully grown and is harvested in March-April. The majority of the farmers had land holding of less than one acre. Very few farmers had land of the size more than one acre upto two acres. A major segment of farmers had small patches of land constituting less than half an acre. The division of land holdings among the farmers was clearly marked around the caste hierarchies. The maximum land was controlled by the dominant OBC (other backward caste) group, Yadavs. They also owned the bigger land holdings. They were followed by the Sahni, another OBC group that owned land in the village. Table 4.3 gives a brief profile of the informants from various households.

**Table no 4.3- Profile of the Informants**

<b>S N</b>	<b>Name of the Informant</b>	<b>No of members in the Family</b>	<b>No of Males</b>	<b>No of Females</b>	<b>Literacy Range</b>	<b>Status of the Family ( APL or BPL)</b>	<b>Land Area Owned (Hectares )</b>
1	Abhay Bhan	7	4	3	0-7	BPL	0.189
2	Mohan Ram Sahni,	9	6	3	0-7	BPL	0.2913
3	Kamlesh Yadav	10	5	5	0-9	BPL	0.679
4	Bhola Ram Yadav	17	10	7	5- BA	BPL	0.406
5	Bipin Sahni	13	8	5	0	BPL	0.559
6	Meena Devi,	11	7	4	0-12	BPL	0.393
7	Ram keval Sahni	14	6	8	0-10	BPL	0.653
8	Binti Devi	5	2	3	0	BPL	0.253
9	Sadhinath Yadav	12	4	8	0-12	APL	1.795
10	Awadh Yadav	12	7	5	5-BA	APL	2.590
11	Kripal Yadav	16	10	6	5-BA	APL	1 1.771
12	Guru Charan	10	4	6	0	BPL	0.539
13	Kallu Ram	9	4	5	0	BPL	0.298
14	Bhanmati devi	18	11	7	5-BA	BPL	0.783
15	Bina Devi	17	11	6	0-11	BPL	0.795
16	Balwan Yadav	14	8	6	5-BA	APL	2.530
17	Bhisan Yadav	11	5	6	5-BA	BPL	0.877
18	Giri Sahni,	7	4	3	5-BA	APL	1.506
19	Madhi Sahni	9	4	5	0-8	BPL	0.632
20	Shivram Singh	12	6	6	5-BA	APL	2.253
21	Ram Raj Sahni	9	4	5	0-7	BPL	0.559
22	Kinari Devi	13	7	6	5-BA	BPL	0.853

23	Kashi Nath Sahni	7	4	3	0-12	BPL	0.327
24	Karmati Devi	10	5	5	5-BA	BPL	1.053
25	Sudeep Yadav	12	8	4	5-BA	BPL	0.991
26	Shyam Pati Sahni	5	3	2	5-BA	BPL	0.458
27	Karam chandar	6	2	4	0	BPL	0.153
28	Sima devi	12	3	9	0-12	BPL	0.878
29	Teejawati Devi	7	4	3	0	BPL	0.682
30	Indirawati	9	3	6	0	BPL	0.253
31	Fool mati	8	4	4	0-12	BPL	0.253
32	Chandrabali	13	7	6	5-BA	APL	1.253
33	Shadhu Ram Singh	11	5	6	5-BA	BPL	0.353
34	Shivram kamal	9	4	5	5-BA	APL	2.253
35	Ram Achal	7	2	5	0-12	BPL	0.632

Source: - Data Collected by Researcher

Other castes mainly cultivated on small patches of land. In the household survey conducted by the researcher, it was found that out of the total of 284 households, 144 were dependent primarily on farming for household income. The working days spent on farming were around 90 to 130 days in the months of March and April. It is difficult to locate the exact number of persons employed in agriculture in one household. Most of the people in the household directly and indirectly contributed to farming. Agriculture was also the site for keeping the unemployed members of the household as disguisedly employed. People who practice agriculture as the primary source of their livelihood are not employed for a full year. The agricultural work also engaged more members from the family than actually needed. Most of the work in agriculture is for a limited number of days as we have noted above. On the other days of year, the same farmers work as daily wage laborers.

A large number of households in the village were dependent on daily labor for securing their livelihood. The daily wage laborers were engaged in work under the scheme of

Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) working for hundred days an year. On the other days, the daily wage laborers depended on construction sites in the nearby cities and towns. Most of the daily wage laborers are landless or have small patch of land. During the agricultural period, most of these daily wage laborers also worked on the farms of other people. In some cases, the households that depended on agriculture for livelihood also contributed one or more members into daily labor. In the study, the researcher found that out of 284 households, 78 were dependent on daily labor for their primary source of livelihood. In the official MNREGA website and the data provided by Gram Pradhan shows that in Neerpur, the number of households applying for job card under MNREGA has increased from 2012 to 2015 from 253 households to 295. In the table 4.4, it is clearly visible that the number of households that demanded work has seen a phenomenal rise from 30 households in 2012 to 162 in 2015. In 2015, for the first time six households completed the 100 days of work. According to the Gram Pradhan, around 40 percent of the workers were females belonging to lower social economic group. However, it must be noted here that in the interaction with the villagers, there was great dissatisfaction with the working of the scheme. Most of them claimed that the data only indicates numbers that don't exist on the field. Some of the local government officers also hinted that the Gram Pradhan manipulated the data and forged the numbers.

**Table 4.4- The details of MNREGA work at village Level**

<b>Categories</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>	<b>2015-16</b>
Total Households Applied for Job Card	253	225	271	295
Total Job Cards Issued	252	225	270	293
Total Job Cards (non SC/ST)	249	222	266	289
Total Households Demanded Work	30	82	78	162
Total Persons Demand	30	83	91	187
Total Households Allotted Work	30	82	78	162
Total Persons Allotted Work	30	83	91	187

Total Households Worked	30	81	76	151
Total Persons Worked	30	82	87	169
Total Households Reached 100 day Limit	0	0	0	6
Total Bank Accounts	122	124	155	218
Total Individual Bank Account	116	108	139	204
Total Joint Bank Accounts	6	16	16	14
Amount Disbursed to Bank Accounts (in Rupees )	1,23,750	3,55,426	4,49,592	4,87,539

Source: *data collected by researcher and <http://mnregaweb4.nic.in>*

A significant portion of land is water inundated in the village making it ideal for cultivating fisheries. Some of the households in the village were dependent on fishing for livelihood. Most of them cultivated fish for their own consumption and bartered with villagers for other goods. Fishing remains their primary source of income. The tools and techniques that they employ for fishing are mainly traditional and devoid of technology. There is another set of households who are fish mongers. They collect fish from the fishermen to sell them in nearby suburban areas. The number of fishermen households in the village ranged upto 36 and fish mongers were 3 out of 284 households. Those households who are into fishing and also have a boat are active in boating. Boating for them is an additional source of livelihood. Most of the people who work as boatmen and fishermen belong to the Sahni caste group. Not all people who catch fish have a boat.

Around six households depend on livestock for their source of livelihood. While a number of households managed livestock, but they used them for self- sufficiency. These six households on the other hand depend on their cattle for livelihood. They sell their milk, eggs and meat for meeting their needs. Rest of the households in the village, as indicated in the table, are engaged in boating, teaching, shop- keeping, watchman etc.

The entrepreneurs are mainly the households that sell everyday goods such as groceries, woodcrafts, beetle- nut, earthen pots. Some of them provided services such as barbers, watchman and teacher etc. The infrastructural facilities in the village are in a dilapidated situation. There is no stable source of livelihood for people in the village. The

entrepreneurial activities pursued by people in the village are also very small scale and insufficient for the household. From the overall picture of the village, we now move to the broad objectives of this research work. In the above picture presented of the economy of Neerpur, it comes across as a regular poor village of the country and the state where most people are working in primary sector economy for their livelihood demands.

## **CHAPTER 5**

### **EFFECT OF RECURRENT FLOODS ON LIVELIHOOD OF THE HOUSEHOLDS: AN ANALYSIS OF SUSTAINABLE LIVELIHOOD FRAMEWORK**

The previous chapter has discussed the hazard profile of the village Neerpur and the state of Uttar Pradesh in general. Because of the recurrent floods, the entire region is destabilized and crippled. The escalating frequency of recurrent floods has directly contributed to the increased number of people impacted by the floods. The economic losses incurred in recurrent disasters pull back the economic development in the affected region by several decades. The lives of the people are severely impacted in the case of recurrent floods. The everyday routine is seriously disrupted in the case of a sudden disaster. However, in the case of recurrent disasters, the everyday routine of the people deviates to another routine which is not entirely unfamiliar. For the people who face recurrent floods, the latter becomes a part of their lives and seasonal concerns. The occurrence of floods is taken as a consideration in day to day decisions. In this chapter, the impact on livelihood in the case of recurrent floods is elaborated using the field observations. It also highlights the mechanisms that are available to the people to deal with issues of livelihood after floods. The chapter also analyses the existing livelihood models in lieu with the experience from the field in the case of recurrent floods.

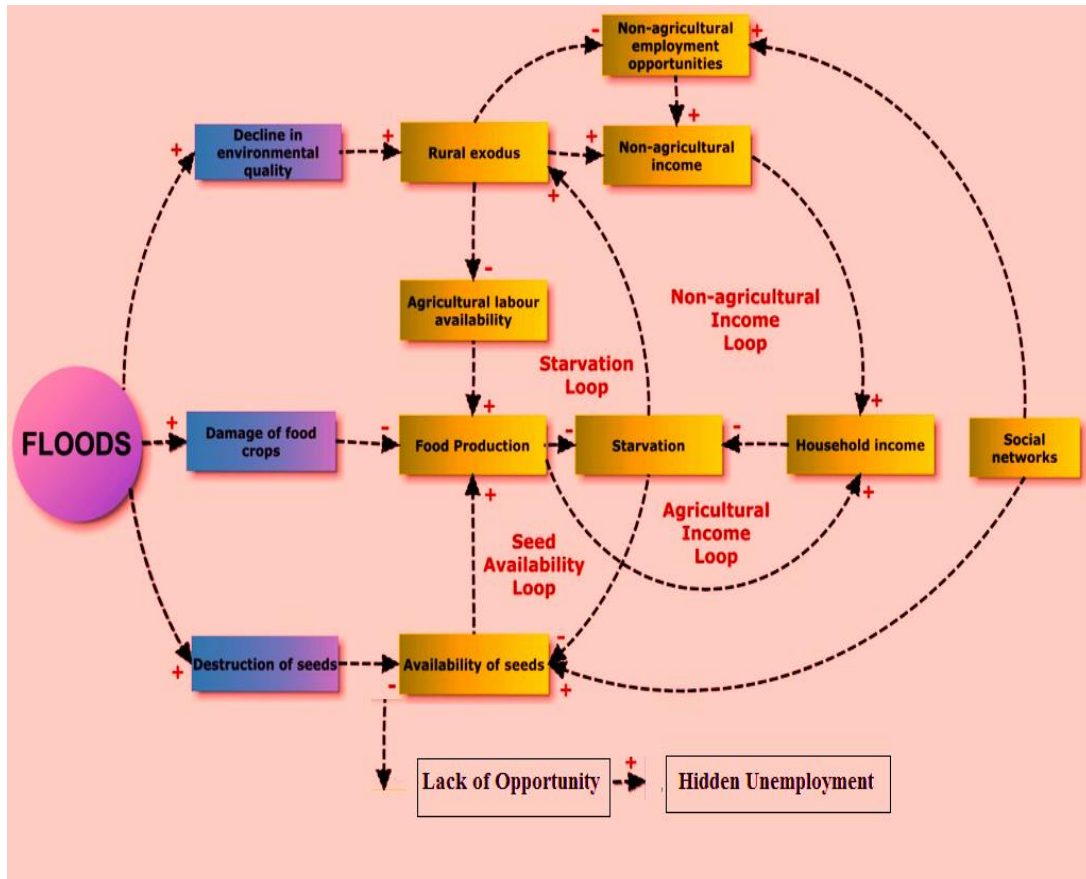
Disaster disrupts the lives of the inhabitants. It destroys their asset base and properties but significantly the impact on their livelihood is prodigious. Livelihood is an important predictor of vulnerability to disasters. It is dependent upon a multitude of social, political and economic factors. Life is usually tough for the vulnerable and marginalized in the social and economic hierarchies, but in the times of disasters, the situation gets even worse. The social hierarchies on the basis of gender and caste in the region impacts the distribution of limited opportunities available to people. In most cases the social networks are impacted to the



disadvantage of the poor as the upper strata of the population siphon off even that which legitimately belongs to the former.

Rural areas are still significantly dependent on agriculture as the prime economic activity. Water logging and inundation destroys the agricultural crops crippling the backbone of the economy in the rural areas. Floods destroy the chief source of livelihood in the rural areas. Further, loss of crops deprives the inhabitants of their major resource base such as food grains etc.; lack of alternative source of employment options leaves them out of employment without any means of livelihood. In addition, water logging interrupts the cultivation activities disturbing the crop cycle for the entire year. It also impedes other livelihood options as all other activities come to a standstill. Floods hinge upon other profitable activities like non-agricultural activities, livestock rearing and daily labour, which in turn gives rise to the problem of unemployment as well as disguise employment in the village. Thus, livelihood study assumes special significance in flood situation in a given area. We can understand this with the following flow chart:

Figure 5.1- Effect of Flood on Different Aspects of Daily Life



Source; - *Armah et al (2010)*

The above diagram depicts that because of the floods, the crops are damaged which automatically reduces food production and causes starvation. The decline in household income from reduced food production deteriorates the social network among the people. The income of the household is a significant determinant of the social networks among the people. The weakening of social networks leads to reduced opportunities for people increasing the unemployment among people and high rate of disguise employment. The floods also damages the natural period of crop production delaying the crop cycle. It clearly shows that the flood disrupts the rural economy and sources of livelihood at a major scale.

As it emerges, livelihood is defined as the means of attaining or earning a living, a combination of resources used and the activities that are adopted by the individuals, communities and the households to live (Antony, 2009). Ellis (1998) defines

‘livelihood as the resources (natural, physical, human, financial, social, and political), the activities and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household’. The resources are detailed as assets that are available to a person; community and household for making the two ends meet in life. The availability of these assets or resources determines the vulnerability of the affected person or household. The livelihood activities are those activities that enable, capacitate and teach an individual into making a living. These activities are employed by various individuals owing to their knowledge, inherent capabilities and assets. The access to these resources is also an important aspect of the attainment of livelihood. The institutional mechanisms and the social relations are two major factors that determine the accessibility of the individuals to their resources.

There are **five key** categories of assets that fill the content of the resources in the understanding of livelihood. These assets or resources are also interlinked to each other and may be present in one particular situation as one or more than one depending on several other factors. These assets differ from one household to another. The assets also change over time and are not static to an individual, household and community. The five categories of assets are natural, physical, human, financial and social assets. The natural assets are the possessions like land, forests, water and livestock. Livestock is a major source of livelihood in the village economy. The cattle rearing for purposes of milk, meat and cow dung for covering roofs and moping floors in rural areas is an important activity. The physical assets are the infrastructural assets such as safe drinking water, sanitation system, drainage facility, schools, hospitals and effective transportation. All of these assets are enabling assets in the everyday life in both rural and urban settings. The skills, capabilities, health and knowledge of an individual are what are referred to as the human assets here. The healthy physical and mental status along with the skills of the person enables him/her to pursue their livelihood. The financial assets include the savings, subsidies, pensions and remittances that an individual receives. The social assets in a rural setting are important determinant of the livelihood opportunities. These assets are the social networks formed on the basis of caste and

kinship ties, the memberships of various groups such as women's groups, political affiliations and other relationships of trust, friendship and acquaintanceship.

### **5.1 Contextualizing the different perspectives on Livelihood**

The meaning of livelihood has not been static across time. The perspectives on livelihood have evolved and changed over time owing to different debates and discussions located in their respective period. It is important to draw and look at the historical trajectory of the understanding of livelihood as it helps us in comprehending the challenges that various perspectives face. It also helps in locating the concerns and challenges that has led to the emergence of the dominant approach of livelihood of the period- sustainable livelihood approach. The term livelihood has emerged as a very expansive category that when attached to different categories it opens up several fields of development enquiry. These include based on location (urban and rural livelihoods), occupation (pastoral, fishing and farming livelihoods), social difference (gendered and age-defined livelihoods), dynamic patterns (sustainable and resilient livelihoods) and several others (Scoones, 2009).

While the emergence of the notion of sustainable livelihoods lies in the 1980s, the discussion on livelihoods goes back to 1950s. In the aftermath of the World War II and the rise of modernization theories, the concerns of development and the related discourses were dominated by the professional economists. The questions of rural economy and livelihoods for policy formulations were dealt by economists with an eye for macro analysis. The Marxist perspective also limited itself with the grand narratives of livelihoods. Scoones argues that while they did not directly indulge in livelihood studies their concerns mainly revolved around the questions of farm economics in postcolonial countries. In 1970s and 1980s, there was the emergence of village studies that brought the micro level studies and empirical work to dominance. It produced the micro analysis of farm economics and household accumulation from the field studies. The 1980s also saw the rise of studies that focused on livelihoods and environment, concerns of social differentiation and cultural contexts. Moving away from economists, the livelihood studies were now undertaken by anthropologists, geographers, social- economists. The interlinking of

political ecology and livelihood studies emphasized on the concerns of reducing poverty and inducing development keeping in mind the long term environmental impact. It is here that the idea of sustainable livelihoods took birth (Scoones, 2009).

In the Indian context, Tara Nair recently argues that the debate of sustainable livelihood covers several new challenges and concerns in the traditional assets based understanding. Some of these new leads on the issue of sustainable livelihoods are to do with the balancing of livelihood generation with climate change, interrelationship between conflicts and livelihood, integration of small producers and market for livelihood, promoting innovations in technology for enhancing livelihoods and developing strategies and involving multiple actors/agents in fostering livelihoods (Nair 2012). Clearly, the concerns of livelihood and disaster are a major lacuna in the discussion on sustainable livelihood.

The multiplied frequency of disaster has impacted the studies in several sectors such as architecture, defense and international relations. However, a major aspect that the recurrence of disaster encapsulates i.e. livelihoods of the people continues to be undermined. The issue of disaster and livelihood is diluted and merged into other related and broader concerns such as climate change and conflicts. Within climate change, the heightened concern of the relation between agriculture and changing climatic conditions gains dominance over disasters both sudden and recurrent and their impact on the livelihoods of the people. Under the challenge of conflicts and livelihoods, the concern is really on balancing social and political stability with livelihoods.

Keeping in mind this glaring gap of relationship between disaster and livelihood, the following section puts forth the detailed description from the field and explains the importance and necessity of including the concerns of disaster and livelihood specifically. In the following section, we elaborate the thematic categorization of various aspects of livelihood, discussing their determination from the recurrent floods before the impact and in the aftermath from the field observations, case analysis and interviews. We conclude with the argument of the need for

understanding the complexities posed by disaster, especially recurrent disaster, in understanding the discourse on livelihood.

## 5.2 The State of Agriculture and Recurrent floods in Neerpur

In the rural economy of Neerpur agriculture is the prime source of livelihood for most of the households. Agriculture is traditional profession for the most people who are skilled in farming. People are trained and skilled to work in the agricultural sector from generations. In the agricultural sector, the employment of the people is for a limited period in a year. Among the farmers, the researcher found that the farmers are employed in agriculture for 90 to 130 days of which the major work is in the month of March, April, September and December. In the other months, the work in the field is relatively less. Most of the farmers in Neerpur practice subsistence farming, some of the bigger farmers cultivate for the market. In the summer and peak time of the monsoon in the months of May, June, July and August, most of the farmers are unemployed and jobless. The following table 5.1 mentions the details of the days and hours of working in the field by farmers in different months.

**Table 5.1 Working hours and days in the village**

Farmer's working Hours (h) / Days											
Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Less than 4,h 2-3 Days	Less than 4h & 2-3 Days	6, h / 18 Days	6, h/ 18 Days	--	--	--	4 h/ 12 Days	8 h/ 18 Days	Less than 4h & 2-3 Days	4 h / 12 Days	6 h/ 18 Days

*Source: data collected by researcher*

### 5.2.1 The changes on the crop cycle

Floods seriously impact the crop cycle of the village. Massive floods for three to four months destroy the capacity and fertility of the soil. **Water inundation** for a long period of time after the floods leaves little time to prepare the land for cultivation. One of the major complaints that could be heard from various people in the village had to do with the inadequacy of the dam built on one of the sides of the village. Mohan Ram Sahni, one of the key informants lamented

“बाँध से उम्मीद रहेल कि हमन के समस्या दूर होई, पर जब से इ बनल बा हमन के सुविधा के उल्टा मुसीबत होई गयल है। पहले पानी जमा ना होत रहे, पानी बरसे तो कुछ घंटन या दिनन में निकल जात रहे लेकिन अब बाँध के एक तरफ की जमीन में पानी काफी दिनन तक लगा रहत है। अब बारिश के बाद बाँध ही आफत होई गई है। पानी इस तरफ से उस तरफ जाता ही नहीं है और पानी लगा रह जाता है। दू तीन महिना त ऐसे ही लगा रह जाए, तो खेत कब तैयार होए ? कब आदमी जुताई बुवाई करे ? हमनी के खाते बाटे लेकिन हमन जोत बो ना सकिल जा। तीन फसल तो दूर की बात है अब तो एक फसल होई जाए इहें बहुत है। ”

*We expected from the dam that our problem will be resolved but ever since this dam has come up, our problems have multiplied. Earlier the water never collected but because of the dam the water does not flow out for months. It does not even moves from one side to other. In this situation when do we sow the seeds in the field? When will we prepare the field? Forget about the three crop cycle, it is difficult to achieve even one.*

As the narration explains, the issue of water inundation has accentuated the vulnerability caused by the flood. In the village, the dam is built on a higher ground level whereas the village is located on a lower ground level. In the case of flood, the entire village remains submerged for months. The drainage of flood water from the village becomes an extremely difficult task hindered by the dam. This keeps the water stagnant in the agricultural land. Farmers have to wait for the water to dry out

so as to prepare the land for cultivation. Another farmer informed about the issue of water inundation,

*“खेतन में बाढ़ का पानी निकले के बाद तराई रह जात हैं एक त पानी देर से उतरत है फिर खेत सूखए में बहुत समय निकल जाता हैं। इहा मिट्टी सूखत सूखत जोतत लाए दो महिना लग जाए. इतना में काफी देर होई जात है और बोवाई के समय में देरी हो जात है। हमन के त किस्मत ही खराब है” ।*

*The water makes the soil moist for a long period. The water does not leave quickly and then the field takes a lot of time to dry up. By the time water dries up, the season is over. It takes two months to prepare the soil. My fate is doomed.*

The **excessive moisture content** in the soil makes it unfit for cultivation after the water flows out. By the time, the soil is prepared; the sowing season is highly delayed. It then further delays the harvest. The delay in the sowing season and harvest in one year delays the cropping season in the next season as well. It further reduces the productivity of the soil. The cost of input investment in the land increases because of the flood water. The reduced productivity does not yield enough output cost. The mismatch between the input and output cost puts agriculture severely under loss for the farmers. As Mohan Ram Sahni told the researcher, that even one crop season is difficult to achieve, the three full crop seasons are a far cry. This has serious repercussions on the state of agriculture in the village. Because of the repeatability of the floods every year, it becomes a never ending situation for the agricultural land to deal with the impact of water left behind by the floods.

### **5.2.2 The changes in agricultural pattern**

Another key informant who runs an NGO in the area told the researcher that the state of agriculture in the village is in a miserable condition. He mentioned about the changes in the agricultural pattern,



“खेती करने में काफी बदलाव हुआ है, ना केवल तरीको में बदलाव हुआ है बल्कि लोग अपनी पुरानी चीजों को दूसरे की नकल करने के चक्कर में बदल रहे हैं। पहले लोग अपने वातावरण ( बाढ की समस्या) के अनुसार कम समय में तैयार होने वाली फसलो को उगाते थे, जिनका उपयोग वे खुद किया करते थे, लेकिन दूसरो की नकल में यहां का किसान भी अधिक समय में होने वाली फलले लगाते हैं, क्योंकि किसान का मानना है कि पहले वाली फसल में उत्पादन कम होता था, जबकि नई किस्म वाली फसल में उत्पादन अधिक है। लेकिन नई किस्म यहां कि परिस्थितियों के लिए अनुकूल नहीं है। एक तो खरीफ की फसल का खेत बाढ की वजह से देर में तैयार होता है, फिर ऊपर से लम्बे समय में तैयार होने वाली फसल उगाते हैं। ऐसे में रबी की फसल में भी देरी हो जाती है। खरीफ की फसल में होने वाली देरी से फसल का उत्पादन गिरता है, जिसकी वजह से रबी की फसल महत्वपूर्ण हो जाती है। लेकिन रबी की फसल भी देर से लगाई जाती है तो जिससे वह फसल अप्रैल के अंत तक तैयार होती है तब तक गर्म हवा में दाने सूखने लगते हैं पतले हो जाते हैं और उत्पादन कम हो जाता है। ऐसे में जिस रबी की फसल पर सबसे ज्यादा भरोसा होता वह भी एक तरह से धोखा दे जाती है। इस तरह साल भर खेती कमजोर ही रह जाती है”।

*The method of farming has changed from not just the techniques but also in adopting new methods. Earlier people according to the situation in the village grew short- term crops and used them for their own purpose. Now people have started imitating others and are growing long term variety of these crops. For them these long term variety of crops yield high production as compared to the previous crops. But the situation in the village does not suit long term crops. Kharif crops take a lot of time to prepare the field which then delays the Rabi crops as well. By the time, Rabi crop blossoms, it is in the month of April. The strong wind in April attacks the plant and destroys it. It causes huge loss to the farmers. This way even the crops that carry a lot of expectations from*

*farmers, also prove unfruitful. The state of agriculture remains weak in the village.*

This observation was confirmed by the other informant as well. Because of the low productivity from short term crops many villagers shifted to long term Kharif crops. They also brought to use fertilizers, pesticides and modern high yielding variety seeds. This shift from the indigenous method of farming has only worsened the situation of livelihood of the people dependent on agriculture. Kharif crops take a long time to bloom and encroach over the season of Rabi crops. This dismantles the entire crop cycle in the village.

When the researcher contacted the agricultural officer about the choice of crops, the officer responded that while government tries to generate awareness about the benefits of the short term crops in the region, the farmers do not seem to concede. The promotion of the short term crops among the farmers has not been much of a success. When the researcher enquired again about the presence of the incentives provided by the government for farmer to grow short term crops, the officer did not recall any. In the lack of insurance from the government with regards to the cultivation of short term crops, it is not difficult to understand that the farmers continued to grow the long term crops which offered them a distant hope of high productivity. The burden of selecting the crop in the region facing recurrent floods lies entirely upon the farmers. The government steps back from taking serious efforts in ensuring crop security and better choice to the farmers.

Among the big land holders (those who have more than one acre of land), it was found that their land was segregated and separated at different locations in the village. The productivity remains low even with the high cost of inputs. For the medium and small landholders, the small size of the land and the reduced productivity makes agriculture loss inducing. However, the fact that the ownership of the land belongs to them prevents them from moving out of the village. The belongingness to the land keeps them tied to their village and agriculture as a livelihood option. Although some of these land holders also possess their land on the upper side of the village as against the small land holders who have most of

their land on the lower side of the village, all the households that are dependent on agriculture for livelihood are more or less equally worse off.

### 5.2.3 Crop Insurance

A major question that emerged after the observation of huge agricultural failure in the village had to do with the crop insurance. If crops were under a constant lack of security, why should there be no crop insurance procured by the farmers? When the researcher posed this question to one of the informants, Kamlesh Yadav, he told the researcher,

*“बीमा वामा गरीबन के नहीं मिलत। हमनी के तो बैंको वाले नहीं सुनते। इ विपदा का जमीन है इहा सब तरह के बीमा वाले डरत हैं काहे के बीमा करिहें। कुछ होवे तो चाही बीमा के एवज में रखई बरे। इहा हमन किसानन के बीच बीमा सफल नाही”।*

*The poor don't get insurance. The people at bank do not listen to us. This is the land of disaster. Here even bank officials are scared to come. What will they insure? Here farming insurance is not successful.*

Another informant in the group discussion mentioned,

*“किसान कोई कोशिशे करी त इ बैंक वाले कौनो ना कौनो कागज के अंडगा लगा देवे ऐसे में बैंक वाले कुछ इ क्षेत्र के लिए कुछ देवे ना चाहें। अपनो पैसा निकाले बरे बैंक वाले 3-4 चक्कर लगवा देवें। लोन वोन पर तो अपना पैसा देवे पड़ जात हैं तब कुछ मिले त मिले वरना कुछ ना होई”।*

*The farmer tries several times but the bank officials dismiss (him) through one way or the other. Even if you want to withdraw your own money, they make you visit ten times. To procure a loan you need to pay extra money.*

It is clearly understandable that offering insurance to a region that faces persistent floods is not a lucrative option for the banks. The recurrent floods in Neerpur prevent the farmers from even procuring insurance for their crops. The certainty of the floods and the devastation of the crops provide enough reason to the banks to

not lease loans and crop insurance to the farmers in the village. This lack of support system that is available in other villages in the state and country are absolutely invisible in Neerpur. The threat of recurrent floods on the village economy looms large on all otherwise available facilities.

#### 5.2.4 MGNREGA

The landless laborers who are skilled in the agricultural work also suffer from the loss in the farming sector. An agricultural laborer Bhola said,

“ गांवन में कौनउ काम ना बा। मनरेगा में काम आयल रहे लेकिन अब ना जाने का होई गयल बा कि उहूँ कुछ काम ना बाटई। परधान ना जाने का करत है कि कुछ काम ना होवत है। इ गांव में हमन के बहुत काम ना आवत रहा लेकिन पहिलवा कुछ अवतो रहा अब उहो ना मिलल जा। हमन के ठेक कामो ना आवे पर पहिलवा खेतवन में कटाई बुवाई के सीजन में काम ठीक मिलर रहे अब खेतवन के हालत ऐसेन बा कि उहा काम हइए नही। पानी एक बार चढे तो ओकरे बाद उहो काम दूबे समझौं। हमन रोज कमान खाइ वाले लोग हवुए, अब गांवन में काम ना उपर से हमन कुछ सीखे ना हुए कि शहर में अच्छा रोजगार मिले, हमन के त शहर में काम खोजे में बड़ी परेशानी होत है। कौनो दिन काम रहत हैं नाही त सारा दिन खलिए चला जात है।”

*The village has no work to do. Earlier MGNREGA had some work but now I don't know what has happened, there is no work in MGNREGA either. God knows what Pradhan is doing. We do not know any other work. Earlier, there was work during sowing and harvesting season but now the farms are in a situation when there is no work. When water comes, it drowns away our work also. We earn every day, we do not know any other skill also that we can go to the city for work. There is so much of difficulty in finding work. Some day there is work, other days are free.*

Another daily laborer working in the village, Sabat Bharti said,

“पहिले हमन के पास थोड के जमीन रही लेकिन कुछ बाढ के वजह से बिक गयल और बाकी अपने काम में। अब केवल इ मजदूरी के भरोसा है लेकिन इहो तो रोज ना मिले। खेतवन में का तो खर्चमें समझों बाकी बाहर के भरोसा है। बाहर जाओ तो कुछ मिल जात है लेकिन हमन केवल फावड़ा चलावड़ जानी त कामो कम मिलत है। इ जिला पिछड़ा है तो इहां के शहर मं काम भी नही है, बाहर जाइ पड़े तब कुछ मिले। हमार चार से तीन लड़का दिल्ली में लगे हैं। इहा तो कौन मौका ना बाटे बस इहा जीवन कटत बा”।

*Earlier we had some land on which did some work. Because of flood water, some land was sold and rest kept us busy. Only labor is the hope now but we do not get it every day. In the farm there is no work, outside I only know to use the digger. This district is backward and there is no work in the city also. Three of my four sons are in Delhi. We are only spending life, there is no opportunity.*

Clearly, the loss in agriculture has direct implications for the daily laborers on agricultural land. Their dependency on agriculture is related with the work available in the field. As agriculture becomes less lucrative as a livelihood option their employment in the field becomes lesser. The laborers also lack any other skill that they can employ for alternative employment strategies. This puts them in a seriously vulnerable situation. Most of them send the younger members of the household out of the village to the cities and metropolitans in search of better livelihood opportunities. Often this does not result in increased income for the household because of the high cost of expenditure of the migrated members in their respective cities. In this study, the researcher also found that the most of the daily laborers were highly under debt due to their day to day borrowings.

The sense of despair and helplessness loomed large in the conversations with the farmers. The sense of choicelessness against the continuity of the floods made them hopeless. They didn't seem to find any merit in most of the options available to them in nearby places. For them, the struggle against the floods was already lost by its endlessness. The sense of resignation was reminiscent in most of their

conversations. The mistrust against the pradhan, the lack of faith in government schemes and paucity of adventurism to pursue another option for livelihood was all connected to the hopelessness against the floods. In any advice or question that was asked, they clearly displayed an immediate dismay. Most of them talked about a bad fate or evil deeds in the previous life as the reasons for their miseries. Even though the struggle is not a physical everyday tussle, but the melancholy in the conversations, surroundings and in lives overall seems to have overtaken their perception about everything in the world.

### 5.2.5 Migrant Workers in Cities

Some of the farmers in the village see migration to other villages and towns as a real option. Migration has emerged as a dominant trend in the village especially among the youth. Almost every household had a member who migrated to another town or city in search of better employment. A major number of people found employment in the adjoining cities and towns. They travelled on a regular basis for work and returned home after a short duration. Children as young as fourteen migrated out to work. The two major cities where the villagers migrate to are Mumbai and Delhi. In these two cities also, they work as unskilled daily wage laborer. A twenty- one year old boy, Bipin Sahni, told the researcher,

*“बारह साल की उमर से अपने चचेरे भाई के साथ दिल्ली चला गया था। एक साल तक इधर उधर किया फिर पेंटिंग का काम सीखा। काम तो ठीक ठाक है पर पैसे नहीं बचता है। दिल्ली में रोज का खर्चा बहुत ज्यादा है। उसी को सम्हालने में सारा रूपया खत्म हो जाता है। उम्मीद कर के गए थे कि पैसा बचा कर गांव में लौटकर एक साईकिल की दुकान खोलेगें, नौ साल से ऊपर हो गया पर कुछ भी नहीं जोड़ पाएं। अब तो वापस भी नहीं आ सकते हैं क्योंकि वहां कहने के लिए काम तो है यहा वह भी कुछ नहीं है”।*

*When I was twelve years old, I went with my cousin brother to Delhi. I worked casually for one year after then I worked as a painter. The job is alright but I cannot save any money. There is so much of everyday expenditure in Delhi that I end up with no money. I hoped that after earning some money I would*

*come back in the village to open a cycle repair shop. But it's been nine years since and I haven't added a brick. I cannot even come back at least I have a job there.*

The people who migrate from the village to the city end up working as informal laborers. Some of them work at construction sites, brick kilns, street vendors, delivery service and painters. In the nearby cities, because of the heavy supply of laborers, employment is a scarcity. Most of them work as rickshaw pullers in the city and are often engaged in several activities to make the two ends meet. The lack of skills among the laborers from the village narrows down the livelihood options available to them. The lack of job security in informal labor sector, inadequate wages and facilities for the laborers keep them vulnerable in the city as well.

#### **5.2.6 Women- headed households**

A major impact of the migration from the village has been on the women who are left behind in the household. The household in the absence of a senior male member is taken over by the senior female member. These female heads of the various households struggle within the male dominated society of the village. After the male member has left for the city it falls upon them to carry on the duties and responsibility that were hitherto performed by the male members. For the everyday errands these women have to struggle against the unacceptability of women and inaccessibility of public spaces for the latter in the village. Meena Devi, a thirty four year old woman told the researcher,

*“उनके जाइ के बाद खेत और बाकी काम करई कठिन होई ग बा। पहलिवा रोज मछली त आई जात रहे अब तो ना आवे तब तक घर में राशन तक मुश्किल बा। और जब तक उ ठीक से कमइबहें ना तब तक गांव ना आवे। इसे में सब दिक्कत हमरे ऊपर रहत हैं। नवम्बर में खेतन में पानी देर ले लगल, काहे कि उ वक्त ऐ देर में आएन। अब हर काम के लिए लोगन पैसा कैस लेहल जाए। एक नाव रहेल उहो बेच के लखनऊ चल गइले त मछिलओ ना मार सकल जा हमन। आस पासके पानी में मछली पकडल जात है। पर उ काफी ना होत। हमार लइका छोट छोट हवऐ तो डर लगा रहत है कि कुछ होई ना जाई। बड़ी मुश्किल से घर बार चलत बाटई। बाहर से लेकर बाजार तक सब काम में*

*दिक्कत आवे। हमन बहरे का काम ना कर सकल जा ना। गांव बाजार दूर है  
नाहि त अकेले चल जाई'।*

*After my husband has left, all others works have become difficult. Earlier fish was there every day but now until he comes even getting ration is very difficult. Till the time he does not earn, I am troubled. In November, watering the field was delayed because he came late. I cannot ask for money from others. There was a boat but that has been sold to fund him to go to Lucknow. Now the fish dies in the water. I have young children; I am concerned of their security also. I have to manage all outside chores. Even the market is so far that one cannot go alone.*

This is not a single case of a particular household, but can be found across several families in the village. Most of these families belong to the lower caste groups and also lower class in society. The men who migrate to the city from the village leave behind the burden of the household on their wives and kids. But they also have to frequent the village back to work in the field and the household. Most of these men arrived back to the village for two months during crop harvest season. This puts them in an unstable situation back at their place of employment. Some of them even lose their jobs when they go back. They have to switch to another livelihood option or search for another job because of the job loss.

The dependence on agriculture for livelihood in the village is a major one for a large number of people. The redundant state of agriculture in the village owing to the recurrent floods has increased the vulnerability of a large population in the village. The changing techniques and practices of agriculture instead of improving the existing situation have worsened it a great deal. The topographical location of the village has made it particularly difficult for the villagers to continue agriculture. The irony of the whole situation is that despite all the hurdles posed in practicing agriculture, it remains the only major source of livelihood. The recurrent floods in the village have direct implications on other sources of livelihood as well. The poor



economy and underdevelopment in the village because of the consistency of the floods have hindered the promotion and pursuit of other livelihood opportunities. Agriculture continues to be the real livelihood option available to the villagers. In the other villages that do not face floods, despite having all other challenges that agriculture faces, the three crops complete a full cycle in a year. In Neerpur, achieving one proper crop well cultivated is a difficult task. The reduced productivity and the declining soil quality have contributed to the decadence of agriculture. This has important implications on other areas as well. A large number of young members from different households migrate to the city in search of livelihoods. Although they do not earn enough to manage the household well, yet the fact of at least possessing a job keeps them busy.

It can be now understood that the recurrent floods have huge implications on agriculture. Floods have altered the very cropping pattern and the cycle in the village for good. There is no livelihood stability, whatsoever, that people have before and after the floods. The lack of a stable livelihood accentuates the vulnerability of the people in the village. The struggle of the people as according to them and as understood by the researcher seems endless. Their survival depends on maintaining several livelihood options and continuing with the meager resources that one earns. The loss in agriculture has severely dented the hopes for a better tomorrow among the people. In the next section, the implications of recurrent floods on the livelihoods of the boatmen and fishing community in the village are analysed.

### **5.3 The State of Fishing and Recurrent Floods in the Village**

As discussed previously, a significant section of people in the village rely on fishing and boating as the means of earning of livelihood. These are fishmongers and rely on the sale of fish for earning livelihood. The boatmen in the village are the ones who get functional during the floods as the means of transport and carriers. Their primary job is to extract silt from the river under the supervision of contractors. Since they have a boat, on days when they are not struggling in floods and do not have a work at the extracting silt, they engage in fishing. All of these

communities belong to the same caste group. The following table 5.2 indicates the working hours and days of the fishermen, fish monger and boatmen throughout the year.

**Table 5.2: The Working Hours and Days of Fishermen, Fishmonger and Boatmen**

<b>WORKING HOURS / DAYS</b>	<b>Month</b>	<b>Fishermen</b>	<b>Fish Monger</b>	<b>Boatman</b>
	<b>January</b>	4 h/ 16 Days	4 h/ 12 Days	4 h/ 16 Days
	<b>February</b>	4 h/ 16 Days	4 h/ 12 Days	4 h/ 16 Days
	<b>March</b>	4 h/ 16 Days	4 h/ 12 Days	6 h/ 16 Days
	<b>April</b>	4 h/ 16 Days	4 h/ 12 Days	8 h/ 16 Days
	<b>May</b>	Less than 4h and 8-10 day	4 h/ 12 Days	8 h/ 16 Days
	<b>June</b>	6 h/ 20 Days	4 h/ 12 Days	8 h/ 20 Days
	<b>July</b>	6 h/ 20 Days	4 h/ 12 Days	8 h/ 20 Days
	<b>August</b>	6 h/ 20 Days	4 h/ 12 Days	8 h/ 20 Days
	<b>September</b>	6 h/ 16 Days	4 h/ 12 Days	6 h/ 16 Days
	<b>October</b>	4 h/ 16 Days	4 h/ 12 Days	4 h/ 16 Days
	<b>November</b>	Less than 4 h and 7-10 Days	4 h/ 12 Days	4 h/ 16 Days
	<b>December</b>	Less than 4 h and 7-10 Days	4 h/ 12 Days	4 h/ 16 Days

*Source: data collected by the researcher.*

The fishermen and boatmen are at their busiest during the months of recurrent floods. In the months of floods, the water submerges most of the areas in the village. The boatmen become crucial as the means of transporting and rescuing people and goods. Since the water takes a long time to drain out, the boatmen continue to enjoy longer durations of work in these months. The fishermen also have the ideal time of their work during the floods. During the floods, the fish

content in the water rises. This makes the period crucial for fishing. On all other days in the year, the boatmen and the fishermen have irregular and less work.

### 5.3.1 Impact on Boatmen

One of the informants told the researcher that few decades back; these boatmen were active in trading and transporting goods. The river had depth then and was ideal for boating. Boating helped many households in procuring a decent livelihood. However, with time, changes in the surrounding have resulted in the shallowness of the river. Increasing sedimentation and irregular extraction of silt have contributed to the decreasing depth of the river. In the absence of the dam, the rivers were flowing full of water. With the rise of dams, the depth of the rivers has decreased which has made boating redundant on days other than floods. The extraction of silt is also becoming difficult day by day because of the strict procedural interventions by the government. This has made situation deplorable for those who had practiced boating as a means of livelihood for generations. The impact of disturbing the natural flow of water and the irregularities of the mechanisms controlling the flow of water in the river had severely challenged the situation of livelihood opportunities. One of the boatmen whom the researcher interacted with said,

*“साल भर काम नहीं नही रहत इहां। पहले नदी में साल भर बालू निकलत रही, अब बालू तो होता है लेकिन ओकरी ठेकेदारी में इतना झंझड़ है कि क्या ही बालू निकरी, कई बार बालू रहे लेकिन निकल ना पावे। जब पानी कम होवे तो बालू ठीक ठाक निकलता हैं लेकिन एक बार पानी आया तो बालू भी खत्म ही समझों। बरसात के टाइम हम अपनी नाव सरकार लगवा लेते हैं, कुछ लोग अपनी नाव अलग से भी चलवाते हैं। इ तरह कुछ महिनों का तो होवे हैं लेकिन पैसा मिलेगा कि नहीं ये केहु के ना पता। पिछली बाढ में नाव लगे रहल हमार पर सरकार इतना पैसा नहीं दिया जितना काम किया। कहते हैं कि बजट नही हैं। हर बार काम ज्यादा लेता है लेकिन पैसा पूरा नही देना चाहते हैं और देवे करे तो आप समझों कि जुलाई का पैसा नवम्बर और दिसम्बर तक आवे है। कई बार प्रधान और लेखपाल मिल कर पैसोवो को*

इधर उधर कर देते हुवे तो मिला ना मिला सब बराबर हो जाता है। अब गांव में रहइ के बा तो इतना उपर नीचे करइ के पड़त है”।

*There is no work throughout the year. Earlier we could extract silt from the river but now the contracting process is so cumbersome that we cannot extract silt also. When the water is low, there is enough silt but when there is excess water, there is no silt. During heavy rains, we work with the government in rescue efforts. Some people row their boats on their own also. In these months, there is work but insecurity of money remains. Last time I rowed the boat with the government but didn't get enough money. They said there is no budget. Every time the work done is more than the money earned and it is delayed also. The work in July yields money in November and December. Sometimes the pradhan also embezzle the money. If you want to stay in the village, you don't speak much.*

The boatmen community in the village although is engaged throughout the year but does not have any substantial source of livelihood. During the study, the researcher got to know that some members from the boatmen community were also involved in illegal production of country liquor. It was a rumor that everyone accepted in the village that the men involved make money from manufacturing illegal country liquor. Interestingly, in conversation with the members from boatmen community, it could be seen that there was a distinct sense of satisfaction with the life. Unlike other people in the village who were quick to criticize the government and the situation of village in general, most of the boatmen, the researcher talked to, were at a discreet calm. They often went into long philosophical renderings about life and world to defend their condition. They also invoked the mythological story of Hindu God Rama requesting a boatman to take him to the forest as the source of their inspiration into their work. They also did not seem to hold much grudges against their situation.

#### **5.4 The Impact on Livestock Rearing**

Apart from boating and fishing, livestock rearing was also a source of livelihood for some people. The animals that are found reared in the village are cow, buffalo, goat and cock. While a lot of households keep livestock as the secondary source of livelihood, there are some that solely depend on them for earning livelihoods. They sell the milk procured from the animals in the nearby cities and villages. Some of them sell chicken meat in nearby areas. They have a relatively stable source of income. During the floods, they let open their animals as it is well known in common knowledge that cows and buffaloes do not drown. However, the animals are heavily affected during floods because of the lack of fodder and water borne diseases. Most of the people who reared livestock complained that they do not get compensation for the death of their animals during floods. A lot of animals who catch diseases die not immediately but later. The administration does not include the deaths then into the loss incurred in floods and declines any compensation to them. Floods put them in a vulnerable situation for they have to fend for themselves and also the family. Because of the water inundation for a long term, they face a difficult time in procuring fodder for their livestock even after the floods. Some of the animals die by eating infected fodder. For those households that depend of livestock as a prime source of livelihood, floods pose a major impediment. It is important to also note that most of these households that considered livestock for livelihood were female headed households. The disease and death of the cattle hampers the stability of the household. A great amount of savings and income from the migrated male heads is expended on the treatment of the cattle. Every year during the floods, they aim to keep their animals safe to avoid disease and death. However, with the lack of sufficient provisions from the government and later in the form of compensation, livestock rearing in the face of recurrent floods in the village becomes extremely difficult.

#### **5.4.1 Impact on Entrepreneurs**

Entrepreneurs consisted of a small minority of the people in the village. These households had a small makeshift shop in their houses or sometimes separately in the village where they sold everyday goods like bidis (a form of cigarette), paan (Betel leaf), tea, biscuits, and grocery. There was a shop that charged mobile phones for some amount. During floods, they shut their shops for several weeks. During this time, they mostly rely on the saved income. The supply of the products that they sell is stopped from the nearby areas during the floods in the village. Some of them mentioned the inability to sell the products at higher prices during the floods because of the pressure from the people and the government. Floods bring to a halt the regular business of these small entrepreneurs.

The impact of floods on the livelihood of the people is overwhelming as clearly emerging from the above. Flood has altered the routines of the people in the village. The three to four months of the floods in the village are stagnant and dynamic at the same time. The village economy and regular routines become stagnant. On the other hand, another routine that is followed during the floods such as preparing for the shelter camps, collecting the savings and arranging for the livestock bring a dynamicity or movement in the village. Massive devastation in terms of the losses in agriculture, livestock and others occur at the same time when the entire economic and livelihood pursuits come to a standstill. Further, the water inundation in the village delays the normalcy in the village for even longer time for 40-60 days (approx). The floods in the village are normalized by the villagers as part of their fate. They see floods as a situation natural to them that they cannot resist against much. In their conversations, their sense of helplessness against the poverty, underdevelopment and continued misery swept over any scope for hope.

The limited opportunity for alternative livelihood is a major setback for the people in the village. The recurrent floods have hindered the development in the village and promotion of alternative livelihoods for the people. In the next section, the situation of the village described above is to be understood in lieu with the dominant models of looking at livelihood. The uniqueness of the situations

emerging from recurrent floods and their understanding with the livelihood models in a major concern in the discussion that follows.

An important aspect of the livelihood analysis is the detailed understanding of assets in a recurrent flood prone region. We have previously mentioned about the different categories of assets that can be employed to measure the livelihood status in the village. In Neerpur, the assets based analysis renders crucial insights with regard to the vulnerability of the people during and after a disaster. The detailing of assets is important to understand the resistance that assets may pose against the impact of the floods. Assets are an important source and strength of livelihoods. The potentiality for stable livelihood is derived from assets that a household maintains. In the following section, the asset base in the different households is discussed to understand the viability of various models of livelihood in the site of a recurrent disaster.

### **5.5- Assets Based Analysis of the Livelihood in the Village**

The dominant model of understanding livelihoods is the Sustainable Livelihood model that takes into consideration a broader definition of livelihood through the sub- categories of assets. Assets are the resources, capabilities, access and claims that enable an individual and households against shocks and threats to pursue and earn a living. Assets are categorized into natural, physical, financial, human and social assets. Natural assets are the natural stocks such as land, air and water resources; and environmental services such as pollution sinks, agricultural cycle etc. Physical assets are the tangible stocks such as basic infrastructure of sanitation, housing, source of drinking water and other resources such as means of transport and other items. Financial or economic assets are the capital stocks such as cash, credit, savings, debts and items such as gold and expensive stones. Human assets are the skills, education, capabilities and good health that enable pursuit of livelihood strategies. Social assets are the networks, memberships of associations, groups and societies (Antony, 2009).

For the purpose of the livelihood analysis, different indicators are selected under various assets to understand the livelihood base in the village. These indicators are

selected as the most extensive indicators that are basic to the definition of the asset and are widely prevalent in the village. These indicators are definitely not exhaustive of the vast definition of the assets and the situation in the village. However, it attempts at covering most of the major indicators that fit into the understanding of different assets. For looking at the state of natural assets, the indicators that are examined are the ownership of landholding and the livestock. The physical assets are to be understood through the indicators such as the type of house, amenities in the house such as electricity connection, radio, television, bike, fan, water pump and separate kitchen, source of drinking water, toilet facility, and type of cooking fuel. The financial assets are to be looked at through the indicators such as tractor, thresher, cash/ savings, bank account and debts. The indicators for human assets are education among males and females in the age group of 15 to 40 years, education among children in the age group of 0 to 14, health facilities such as health centers and anganwadi centers, and infant mortality rate, maternal mortality ratio, marital status and average age at child birth, place of child birth and nutritional supplement at anganwadi centers. The social assets are identified through the indicators such as the structure of the family, groups on the basis of caste, gender, class and membership and participation in Gram panchayats and self help groups. These indicators depict the potential strength and vulnerability of the household in the pursuit of various livelihood opportunities in the case of a recurrent disaster.

### **5.5.1-Natural Assets**

In the fourth chapter, we have discussed in detail the size of land holdings that different households in the village possess. The topographical location of the land in the village has important bearing on its division among people. The members of the dominant caste group, Yadav, have most of their land holdings on the upper side of the village. While it does get affected during floods, the water does not accumulate for a long period of time as compared to the low lands. In the lower areas, the land is owned by members from Sahni and Yadav caste groups. They also have their land closer to the river. At times, the river changes its course and occupies the portion of the land. The identification and rehabilitation of the land at



a different location takes a lot of time and often gets lost in the bureaucratic procedure. Sometimes the land that is procured is not equal to the size that gets submerged as the allocation depends on the availability of the land with the gram sabha. Sometimes flood adds to the productivity of the land with the new fertile soil, but because of the inundation, the land remains un-utilized for around 40-60 days. Despite possessing the land, it remains un- utilized because of the floods.

The recurrent floods in the village severely limit the number of crops one can cultivate on the land. The repeated cultivation of the same crop on the land also affects the productivity. Agriculture in the village is a challenge. While many households possess land of varying sizes, cultivation is a difficult task because of the multiple challenges. When it comes to supporting the agriculture from a constant jeopardy, the insurance schemes are absent in the village. The private firms do not risk insuring a field marred by recurrent floods. The government crop insurance schemes, surprisingly, also exclude the entire district categorically. It does not cover the district under the government crop insurance scheme. The reduced agricultural outcome and the low productivity because of the repeated floods do not strengthen the livelihoods of the people. In the lack of a government support, there is no assurance that people hold against the crop failure. Land as an asset is translated into a burden in the face of recurrent floods and lack of support from government agencies.

Livestock is another major natural asset that acts as a shock against the lack of livelihoods in the face of adversity. In rural societies, livestock provides a strong support to the household by providing for the direct needs of the family as well for income purposes. In the households, where the male member/s has migrated out of the village, there is a declining trend towards keeping livestock. For the women headed household, livestock are difficult to manage and maintain. With the male members moving out to the city, the cattle are sold out to support and fund the family. One or two cattle are kept to provide for the bare subsistence of the family. Livestock in this situation although provides for some minimum needs of the

family, fails to enable the flow of substantial income for the family. It restrains any entrepreneurial activity that a household can pursue for a stable income.

Keeping livestock is a major liability for a household especially during floods. The animals are prone to catching many diseases during floods. In the village, animals are quick into contracting *foot-and-mouth disease*, *Hemorrhagic Septicemia*, *Ovine rinderpest* or *PPR disease*. Livestock in a region mired by recurrent floods are a huge burden to maintain especially for female headed households where males have migrated out. During floods, a household has to take extra care to look after their animals. In the government scheme for livestock management, the impact of floods gets the special attention. It divides the various precautionary messages for the affected households into pre- floods, during floods and after floods. A major suggestion by the state government department is to get timely vaccination of the animals from the nearby government animal hospital. For the treatment of the animals, the state government recommended the constitution of teams for regular vaccination of animals during floods. However, the suggestion is ignorant of the ground realities in the animal care centers. The lack of veterinary personnel in the animal care centers is a harsh fact. The suggestions of the government do not mandate the number of members in the team to be made. In the lack of veterinary personnel available at the immediate animal care centers, it is not difficult to understand the failure of the recommendation at the ground level.

The recurrent floods in the village have seriously undermined the potential of the natural assets. The latter fail to improve or rejuvenate over the years as the repeatability of the floods keeps them weakened. Even after the improved variety of seeds and chemicals, the productivity in the village could not be increased. The entire crop cycle has been derailed because of the floods. The land in the village is a seriously under- exploited asset. Livestock as an asset strain the work of the household especially during floods. The natural assets fail to meet up the shock challenges posed by the floods to provide for the demands for livelihood by the households. The recurrent floods hollow out the otherwise procurable stability from the natural assets. Thus, one can clearly see that natural assets become more of liability in the situation of recurrent floods in the village.

### 5.5.2 Social Assets

Social assets are those assets which a household relies on when pursuing a livelihood strategy. The relationships are on the basis of gender, caste, class and kinship ties, interest based associations and groups and various other affiliations of the household that act as social resources for livelihood attainment. A simple example that could widely be seen in the village in terms of social assets was the help and support that people sought when migrating for work from those members of the village society who had already migrated and settled into another city. The belongingness to the village acted as an identity that made help available to other members even in far off places. Other such social resources that could be seen in the village are the caste and gender based loyalties. The economic parity among different households also contributes to the sharing of confidence and trust. In the villages, social assets can be analysed through caste, gender and class based loyalties, the structure of the family and the memberships of various self-help and other groups.

In the village, most of the groups are formed around **caste and gender** identities. These are interest based groups where members of one caste get together and support other members in matters of marriage, death, economic distress and conflicts. The caste groups that are formed are usually around one caste and their sub- castes only. The Sahni caste group is different and separate from Yadav caste group. Since most of the members of a caste group are also engaged in the same occupation as well, there is a great degree of reliance on each- other for work related information. The Sahni caste group that is engaged in boating, fishing and collecting silt often works together in group consisting member of the caste. At times, they stay in different places together while collecting silt. The caste groups are also important in the village to establish the social and political dominance in the village. The Yadav caste group particularly works together to form strong political hold in the village. They also help the members of the village during floods. For example, those members whose land is at the higher level in the village

help those who have their land in the lower land. The situation is similar amongst the lower caste people who also form solidarities within their caste group.

A second type of group which is a **self-help group** with definite agenda and motive in the village is around class identity. The members who are on par with each other economically get - together to form an economic self help group. These groups are based on cross caste identities. All the members in one group decide a particular amount of money that they submit monthly/ quarterly/ half yearly to the mediator of the group. The members can withdraw the accumulated amount after a certain period of time whenever they want. This collection of money acts as their safety net during times of need such as for paying off debts, loans for marriage, buying crop inputs, medical emergencies and death etc. Often because of recurrent floods, members stay in continuous penury. A lot of members fail to ensure the regular deposit of money in the group. This breaks the cycle and members are expelled from the group. Sometimes members withdraw huge amounts of money from the group but fail to repay the amount back. This causes considerable loss to the group. The membership of the group for these reasons is strictly limited to similar class locations only. The members who fault at full payment or at the regular deposit of money are also treated as outcaste outside the group in other social relations in the village.

The women in the village formed their self help group. These are also cross caste groups. In monetary terms, these groups function with the support of the families of the respective women members of the groups. Women in the village do not enjoy a personal and separate income from the rest of the family. It is difficult for them to maintain their self help group without the support of the family. The recurrent floods in the village are a major challenge against the sustenance of self help groups. The household expenditure during and after flood increases many folds and exceeds the household income. There is no room left for the household to maintain savings for the self helps groups. Since the floods impact everyone in the village there is no strong monetary support that they receive from the members within the village. Self help groups become important for emotional, conflictual and social matter pertaining to marriage, dowry fight within the family, child birth and death

etc<sup>1</sup>. One of the women mentioned that when her husband migrated for work outside and could not come for her delivery, it was the members from the self help group who accompanied her during the delivery.

Social assets are the resources that provide emotional, psychological and material help and support for the pursuit of livelihoods. In the village, social assets in the form of various associations and affiliations with groups are important to provide a sense of emotional security to the people facing recurrent floods. However, it does not always translate into livelihoods for the people. There is a degree of help that social asset grants to the men in settling down and finding a work when they have migrated out from the village. But within the village where most of the people face recurrent floods, where the situations remain similar for most time in the year and also do not seem to change over years, there is less support in terms of livelihood that emerge from one another. There is also less faith that people can pose in one another with regard to the return of money mostly because of the blatant failure of existing livelihood strategies. Social assets in this case help in other matters such as that of marriage proposals, emotional support during death in family, supporting and resolving conflicts in the village and other similar needs. These are very important everyday matters that bond people together. Recurrent floods in the village have toughened the life for all the people in the village. It has brought them together in sharing each other's burdens and pains but does not necessarily help them in supporting monetarily. Social assets in the village do not enable livelihoods but only provides them the emotional support to bear with the lack of it.

### **5.5.3 Human Assets**

Human assets are the most important and indispensable of all the assets. These are the resources that are ingrained in the individuals so as to enable them to pursue livelihoods. These are the skills, knowledge, ability to labour, good health and physical capability to seek livelihood. The skills and talents of the individuals

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<sup>1</sup> Marriages are considered as important events in family. During such important events, the members in self help group often helped each other. It was common for the member whose turn it was to withdraw money to give up and let the other member who is in need to withdraw on their chance. Such small acts made up big relationships among the members. Similarly, they were to stand by each other and help in the difficult times like death etc.

capacitate them for utilising those skills in return of a reward/income. The good health is important to mentally and physically prepare the individual to actually produce worth from the skills. For any skill, knowledge or talent to be profitable, it is important that it must be in demand in the market. This is to say that the skill has to be exchangeable in the market (commercial and non- commercial) so as to deliver returns. The talents that are not hot property in the market may not yield livelihoods for the people despite their otherwise importance and uniqueness. For example, being able to speak an extinct language, or repair gramophones are unique talents but do not result into rewards or any income for the same. In this category of assets, there are two major indicators that are taken up to look at the livelihood potential of the people in the study village. These are the respective educational status of males and females and the health infrastructure in the village. The educational qualification is an important human resource that enables the individuals to procure livelihood for self and the household. The medical infrastructure in the village is also crucial to ensure, if not warrant, a healthy and disease free life for the people in the village.

In the study village, the total literacy rate is 46.1% (Census 2011). Among the total female population in the village, only 34.4 percent of the women are literates. Out of the total male population, 56.4 percent are literate. There are two primary schools till class five for both girls and boys located at nearby two different locations. One of the schools is located within the study village and the other school, although located at a close distance, fell in the other village. The researcher during the study was informed that one of the schools had recently received an appointment of a teacher. Prior to that, the school was shut for six months. It reopened after a teacher was appointed in the school. The primary schools had separate building with toilets for both girls and boys. The toilets were in a pathetic condition and did not seem fit to use. When the researcher talked to the one of the teachers, the latter confided in the researcher that most of the students in the schools come only to use the benefits provided to them by the government. These include the scholarship, uniforms and the mid –day meal. The people in the village are reluctant to send their children to the schools. They find it of no use and rather

choose to employ them at work in the fields or at home to take care of younger siblings. The following table 5.3 captures the strength of the students in the two schools in the village in the years 2011-12 and 2012-13.

**Table 5.3 – Total Number of Students in Schools**

	Total		Male		Female		OBC		SC		General	
	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13
<b>Class -1</b>	43	35	24	25	19	10	41	34	2	1	0	0
<b>Class -2</b>	40	42	20	22	20	20	37	40	3	3	0	0
<b>Class -3</b>	41	42	23	21	18	21	33	39	8	3	0	0
<b>Class -4</b>	46	40	13	21	22	19	42	32	4	8	0	0
<b>Class -5</b>	47	47	21	25	27	22	46	40	1	6	0	1
<b>Total</b>	<b>217</b>	<b>206</b>	<b>111</b>	<b>114</b>	<b>106</b>	<b>92</b>	<b>199</b>	<b>184</b>	<b>18</b>	<b>21</b>	<b>00</b>	<b>01</b>

Source -

[http://scholarship.up.nic.in/2011\\_12/rural\\_sch\\_list\\_pre.asp?dcode=54&dname=siddharthnagar&bname=JOGIA&bcode=0005](http://scholarship.up.nic.in/2011_12/rural_sch_list_pre.asp?dcode=54&dname=siddharthnagar&bname=JOGIA&bcode=0005)

[http://scholarship.up.nic.in/2012\\_13/rural\\_sch\\_list\\_pre.asp?dcode=54&dname=siddharthnagar&bname=JOGIA&bcode=0005](http://scholarship.up.nic.in/2012_13/rural_sch_list_pre.asp?dcode=54&dname=siddharthnagar&bname=JOGIA&bcode=0005) and field work data.

According to the table, the total enrollment of students in the two schools remains roughly the same in two years. In 2011 -12, the total number of male students is 51.14 percent and female students is 48.86 percent of the total enrollments in two schools. In 2012- 13 the total number of the male students is 55.33 percent and female students is 44.72 percent of the total enrollment. The percentage of the OBC students in the two schools in the year 2011-12 is 91.70 percent of the total enrollment and the percentage of the scheduled caste students in the village is 8.29

of the total enrollment. It must be noted here that these numbers are the official facts. Their verifiability is contestable. The researcher never encountered such huge number of the students in the classrooms. Even the teachers were found to be very reluctant toward performing their duties. The attitude of the villagers at education for their children was lackadaisical and half hearted. For them schooling of their children was not much instrumental in their lives. One of the informants told the researcher,

“ पढाई कई के का करल जाय, रोजगार त हड़ये ना बाटड़। बाढ के इलाकन में त सरकारी मास्टरवो ना आवे। पढाई कर के का कर ली जाय रोजगार त हवे नाही। कम से कम पढा लिखा नाही ह तो फावड़ा चलाइ लेत है। पढाई कर लेई त इहो ना चलाए। फिर सरकारी स्कूल में आज कल पढाई नहीं होत और उहा के पढत पढावत बा? थोड के पढ के का करी जब दिल्ली मुंबई काम करई के बा। वैसे पढाई जरूरी है पर हमन के भाग्य में त इही लिखा बाटई।हम कहे बरे तो 8 तक पढे हैं पर अइसन पढाई के का मतलब कि अपनउ नाम तक लिखई नाही आवत है।एहन जौन लड़कव स्कूल जात हुए अहन के कुछ नाही आवत। बस नाम के स्कूल में नाम लिखवाएन हैं। मास्टरन के कौनो मतलब नाही। उनकर त महिना के तनखाह आवत बा। पढाई के का बा यहा त नाम के स्कूल बा और ना के पढाई।”

*What to do after studying, there is no work. In the region of flood, the teacher does not come. If not study then at least they should know to use the digger. If they study too much, they will not do this work also. There is no education in government schools. Anyway, the jobs are in Delhi and Mumbai. Although it is important to study, it is not in our luck. I have studied till class 8 but cannot write my name properly. All those who go to school cannot even write their names. Teachers do not care, they are only for namesake. They study or they eat. School and education are for namesake here.*



The narrative clearly displays the sense of non-enthusiasm towards ensuring education for the children. The lack of proper personnel and infrastructure in the schools is a major reason to be blamed. The teacher at the school also did not seem to be much interested in the work as noted by the researcher in the conversation. He complained about the multiplicity of the government works that they receive throughout the year in the form of polio vaccination, awareness programs, election duties, census duties and other such responsibilities that keep them occupied for most time in the year. Most importantly, both students and the teachers stayed away from the schools during the floods in the village. For two to three months, the school buildings are used as temporary rehabilitation centers for the people. In such a situation, it is difficult to convene classes and hinders the education for the students. After the floods, it takes time to reconvene the classes as people are busy in settling down and in recovery work.

In the village, the researcher also found that there were no skill development programs being run by any governmental or non- governmental organization. Most of the villagers did not know any skill other than the work they were employed in. In the village, when people moved out to other cities in search of jobs, because of the lack of education and any skill, they do not find quality jobs and have to confine to manual labour.

The condition of **health infrastructure** in the village is not on the bright side either. In the following table 5.4, the availability and the distance of the health centres and clinics run by the government and non-government organizations are indicated.

**Table -5.4 Different Amenities and Facilities in the village**

<b>Medical Amenities available. (If not available within the village , the distance range code viz; A for &lt; 5 Kms, B for 5-10 Kms and C for 10+ kms of nearest place where facility is available is given).</b>	Community health centre (CHC)	C
	Primary health centre (PHC)	C
	Primary health sub centre (PHS)	B
	Maternity and child welfare centre (MC)	C
	T.B. clinic (TBC)	C
	Hospital-allopathic (HA)	C
	Hospital-alternative medicine (HO)	C
	Dispensary (D)	C
	Veterinary hospital (VH)	C
	Mobile health clinic (MHC)	C
	Family welfare centre (FWC)	-
<b>Number of Non-Government Medical Amenities available.</b>	Charitable non Govt. hospital/Nursing home	0
	Medical practitioner with MBBS Degree	0
	Medical practitioner with other degree	0
	Medical practitioner with no degree	0
	Traditional practitioner and faith healer	3
	Medicine Shop	0
	Others	0

Source : Census data <http://www.censusindia.gov.in/2011census/dchb/DCHB.html> and data collected by the researcher.

In the village, the nearest health clinic available is the primary health sub-centre at a distance of five to ten kilometers from the village. The Primary health centres (PHC), the community health centres (CHC) and all other specialty centres (district hospitals and private hospitals) are at a distance of more than fifteen kilometers from the village. The non- governmental services are non- existent except for the presence of the three traditional healers or *vaid*s. In the village, ICDS (Integrated Child Development Services) is available that focuses on the children and lactating women. The Anganwadi worker told the researcher that the women in the village were suffering from malnutrition. She distributed the food items that she received to the women in the village and suggested strongly that they should eat them. She also cooked food for the enrolled kids at the center. The children from different caste and class groups went to the anganwadi center. The Anganwadi worker acts as the connecting person between PHC and the village people. During the floods, she along with the Primary health sub- center distributed the oral rehydration salts and basic medicines during the floods. The village had ASHA (Accredited Social Health Activist) worker who took care of the delivery of the pregnant women. She told the researcher that there was still a preference for home and traditional deliveries. Although the situation improved marginally, yet most women were reluctant about institutionalized deliveries.

When the researcher visited the primary health sub-centre, it was found that it did not open before eleven in the morning and shut down at two in the afternoon. Although there are four beds in the hospital, they were in a dilapidated condition. The toilets in the hospital were in a repugnant situation. Only four people were appointed in the primary health sub-centre including the pharmacist and the ward boy. The hospital looked empty most of the time. It is ironical as the building of the centre was newly built with residence for the doctor and the pharmacist. It was well tiled, had separate toilets and lab. But the condition under which it was maintained was abominable. Most of the villagers complained that for every malady, the doctors gave same prescription and tablets. When the researcher checked it was a paracetamol tablet that they received. When enquired about the preparation during floods, the pharmacist told the researcher,

“ हम तो अधिकारी से कई बार लड़े हैं कि जब पानी आने लगा तो दवाई बिस्तर का प्रबंधन सही करिए। पहले से तैयारी हो तो कम दिक्कत हो। पर इन लोग जब बार्डर पर दुश्मन आ जाता है और तिरंगा झुकने लगता है तब भागता है असलहा लेकर। जो सर्दी में मंगाओं वो गर्मी में आता है और जो गर्मी में मंगाओं वो सर्दी में आता है। अब ऐसी दवाओं का आदमी का ही करे?

*I have complained to the authorities to prepare well before the water enters. If you prepare earlier, it is less difficult. These people become active when there is enemy already at the border and the tricolor is taken down. What you ask for in winters comes in summers, what you ask for in summer arrives in winters. What can one do with such medicines?*

The doctor and the pharmacist recognized the problems at the centre but blamed the authorities for it. The people did not rely on the centre for their needs. They preferred the district or civil hospital which is at a distance of twenty- one kilometers. They appreciated and spoke well of the recently launched ambulance service provided by the state government. Following is the case study of a woman that the researcher met in the village.

### **Case study- Binti Devi**

The following case study discusses the condition of the pregnant woman during the floods. Binti Devi is a 38 years old woman married to Santosh Singh of Neerpur village. She belongs to Sahni caste group in the village. She has three children aged eight, six and three year old respectively. The two elder children are girls and younger one is a boy. Both the husband and wife work as daily wage laborers on the field of the other farmers outside the village. Together, they earn around Rs. 550 in a day when they both are able to find work. They own a kuchha (mud) house in the lower region of the village. They also own a small patch of land which is of

0.2353 hectare size. Since, the work on the land is irregular; the family survives on daily wage labour as their prime livelihood option.

*In 2013 in the month of late August, after the floods, Binti found that her younger daughter suffers from blisters at her back and hip part. She tried local medicines and home remedies but it did not get better. She went to the primary health sub centre who suggested her to take the daughter to the district hospital. Next day, she went along with her husband and the girl taking a bus to the district hospital. The bus dropped her one kilometer away from the hospital from where she walked to the place. She took an appointment slip for which she paid some money and then waited for her turn. She got her turn at 4:30 in the evening. The skin doctor diagnosed it that it was a regular blister but got worsened because of the delayed proper treatment. He suggested that the girl must stay at the hospital for at least two nights. The treatment started the same day.*

*Binti and Santosh stayed at the hospital in the general ward next to their daughter. They missed their work for three days continuously. They ate their two meals at the stall and small dhaba outside paying rs 25- 30 for per meal. They washed themselves at the public toilets that charged them rs 10 for bathing and other purposes. After two days, the doctor suggested to stay for one more night. Next day, they took the discharge prescription and came back home. They hired a tempo because the daughter had to lie down and could not sit. She paid rs 150 for the tempo. She reached back home and after four days of medicines and care, the daughter became fine again. In the rest of the days, the elder daughter missed*

*her school to stay back with her sister while the husband and the wife when out to work.*

*Binti spent around one thousand rupees on her travel, food and medicines in the district hospital. While the daughter got well, the couple missed out on the wages for three days as they did not go to work. Binti told the researcher to recover from the damage caused by the floods and manage the sickness of the daughter, she had to spend her savings from past six months. It was an expensive deal for her. She could not spend more time with the daughter as she quickly had to go back to work to fill for the loss incurred.*

The case study explains that despite pursuing treatment in the government hospital, the family had to invest out-of-pocket expenditure. They had to spend the money on travelling back and forth, food and lodging and medicines of their daughter. This is an indirect cost that is not taken into account by most government analysis. The family had to leave the daily wages for four days in a row immediately after floods when everyday work becomes even crucial and rare. During the floods, the risk to diseases and the challenges increases manifold. The travelling expenses are higher than usual routine days and the hospitals are more crowded. It is even more difficult for old men and women as people are less willing to spend more time in care work. Clearly, the state of health infrastructure in the village is in a miserable condition. It adds extra burden on all the people in the village in case of sickness and diseases. The time expended on taking care of self and the household is often at the cost of the work for the occupied days. Keeping in mind the discussion about the educational and health status in the village, it is not difficult to assess that the human resources available with the households in the village make it more strenuous and challenging for them to pursue livelihoods. The poor educational and health infrastructure adds nothing to their skills and talents and disables them from pursuing opportunities otherwise available respectively. It keeps them at the vulnerable margins worsening it even more during the floods.

#### 5.5.4 Financial Assets

The financial assets or resources are an important support for the people in the village to sustain a stable economic livelihood for the household. The financial assets become crucial as the backup option which they can rely on when pursuing a livelihood strategy. In this category we look at the savings, credits, jewellery and other subsidies and pensions. These are the important sources to maintain a regular flow of income and as an alternative option to rely on in case of need. In the region affected by recurrent floods financial assets gain importance as flood disrupt a stable flow of income and livelihood.

The subsidized food grains are one of the important components of the financial assets in the village. It ensures a regular supply of food grains to poorer households and ensures their livelihood stability. Although the distribution system is overtaken by corrupt practices, it still is the only source of procuring cheap food items by the poor households. The distribution of Below Poverty Line (BPL) cards<sup>2</sup>, Antyodaya Anna Yojna<sup>3</sup> and Above Poverty Line (APL)<sup>4</sup> cards are a significant financial help to maintain regular supply food grains in the households. Presently, The National Food Security Act (NFSA) ensures the supply of food item such as wheat, rice, kerosene oil and sugar to the households in the village. From January 2016 onwards, the food supply is provided to the selected households in the village under the NFSA scheme. The old BPL card distribution system serves only kerosene oil. The process of transforming public distribution system completely under NFSA is still an ongoing one. The following table 5.6 states the total number of beneficiaries of Antyodaya Yojna and the NFSA in the village.

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<sup>2</sup> Below Poverty Line is an economic benchmark adopted by the Indian government to mark out the economically poorer households in the society that are in need of government assistance. These households are issued cards to procure benefits from various schemes run by the government. These cards are known as BPL cards (Official website of Siddarthanagar District).

<sup>3</sup> Antyodaya Anna Yojna is the Government of India scheme that seeks to provide highly subsidized food to the households that fall Below Poverty Line (See [www.pradhanmantriyojana.co.in/antyodaya-anna-yojana/](http://www.pradhanmantriyojana.co.in/antyodaya-anna-yojana/)).

<sup>4</sup> Above Poverty Line cards are issued to those households that are above the threshold set by the government to indicate the economic vulnerable households (Official website of Siddarthanagar District).

**Table -5.5 The Beneficiaries of the National Food Security Act (NFSA) in the Village**

Eligible households		Antyodaya Anna Yojna		Total Card Holder	
Ration card	Beneficiaries	Ration card	Beneficiaries	Ration card	Beneficiaries
324	1685	77	384	401	2069

*Source: Food and Civil Supplies Department, Uttar Pradesh.*

During the floods, the supply of food grains is ensured for all the households in the village. Most of the households in the village have bank accounts as the latter is a key requirement in most government schemes. There are no banks and cooperative societies that are located in the village. To avail these services, people have to travel to other nearby sub-towns. Opening a bank account was not found to be an issue among the people in the village. The researcher found that in some of the households, there were more than two accounts according to their enrollment in different government schemes. The recent government announcement of Jan Dhan Yojna mandated a bank account for all applicants. Many people in the village were quick to avail themselves the benefit of the services to be offered under the scheme.

It is difficult to calculate the savings of the household although in conversation, most of the respondents denied having any savings. Most of the households had borrowed some amount of money from others in the village. The jewellery in such cases was often kept with the lender as the security especially those who did not own land. There were five main moneylenders in the village. Some of the moneylenders were relatives and associates outside the village. The moneylenders in the village belonged to the Yadav and Sahni caste groups in the number of three and two respectively. They lent at the rate of Rs 2 at the amount of Rs 100 per month translating into 18-24% per year. The local moneylenders are seen as preferable source of procuring loans because they can negotiate with the amount and period of installments. This information was revealed to



the researcher under secrecy. There were four families that owned a tractor or thresher. Most of them borrowed a tractor on rent on a sharing basis with other households.

The financial assets in the village are not very strong owing to the weak economic base of the people in the village. The recurrent floods in the village keep most of the households in penury. A large amount of savings are also expended into recovery from diseases and losses incurred during floods. Their capital resources such as land, vehicles and jewellery were under the occupation of the lender as the security amount. The government schemes were a major source of reliance for food items and cooking fuel etc. for most of the households. The opportunities to pursue alternative livelihoods were scarce because of the situations created by the floods in the village. The financial assets failed to strengthen the economic livelihoods of the people. The repeated floods in the village hindered the stable growth of financial resources in the village.

#### **5.5.5 Physical Assets**

Physical assets are the tangible resources that are important to ensure a productive living for the people. These are the tools and the goods that constitute the basic infrastructure available in a household. Resources like affordable transport, clean drinking water, sanitation facility, strong shelter and consumer goods enable a household to function smoothly. The comfort and disease free living that is ensured by these resources contributes to a healthy and unhindered pursuit of livelihoods by the people. Due to the lack of clean drinking water, proper sanitation facilities and expensive transport services, it is not difficult to imagine that seeking livelihood is troublesome and riddled with maladies. Under this category of asset, we look at different indicators such as the presence of various household amenities and facilities, the type of house, cooking fuel, source of drinking water and the sanitation facility in a household to understand the strength of the foundation of physical assets in the village.

The following table 5.6 indicates the presence and accessibility of some of the important indicators of physical assets in the village.

**Table 5.6 Physical Assets in the village**

Type of physical assets	Indicators of physical assets	Status
<b>Availability of drinking water - Yes / No</b>	Tap water (Treated/Untreated)	No
	Well water (Covered / Uncovered well)	Yes
	Hand Pump	Yes
	Tube wells / Bore well	No
	River / Canal	No
	Tank / Pond / Lake	miscellaneous
<b>Availability of toilet &amp; others Yes / No</b>	Community toilet including bath	No
	Community toilet excluding bath.	No
<b>Communication and transport facilities (If amenities available code - Yes is given except for Village Pin Code ,If not available within the village , the distance range code viz; a for &lt; 5 Kms, b for 5-10 Kms and c for 10+ kms of nearest place where facility is available is given).</b>	Post office(PO)	C
	Sub post office (SPO)	C
	Post & Telegraph office (P&TO)	C
	Telephones (Land lines)	-
	Mobile phone coverage	Yes
	Internet cafes/ Common service centre (CSC)	C
	Private courier facility	C
	Bus service (Public & Private)	No
	Railway stations	No
	Auto/Modified Autos	Yes
	Taxis and Vans	Yes
	Cycle-pulled rickshaws(Manual & Machine driven)	Yes

	Carts driven by animals	Yes
<b>Village connected to highways, village roads, banks &amp; credit societies (If amenities available code - Yes is given, If not available within the village , the distance range code viz; a for &lt; 5 Kms, b for 5-10 Kms and c for 10+ kms of nearest place where facility is available is given)</b>	Connected to national highway(NH)	C
	Connected to state highway(SH)	C
	Connected to major district road (MDR)	C
	Pucca roads	Yes
	Kutchcha roads	Yes
	Commercial & Co-operative Banks	No
	ATM	No
	Agricultural Credit Societies	C
	Public distribution system (PDS) shop	Yes
	Mandis / Regular market	Yes
Weekly Haat	Yes	
<b>Availability of electricity (Yes/No)</b>	Power Supply for Domestic Use (ED)	Yes
	Power Supply for Agricultural Use (EAG)	Yes
	Power Supply for Commercial Use (EC)	No

Source: Census of India 2011 and data collected by researcher.

Among the various sources of drinking water in the village, the water from well and handpump was the most accessible to them. Most of the houses sent the female members of the family to fetch water for the household from the well or handpump which fell within a distance of 100 metres. The water brought from these two sources was used for all purposes-drinking, washing and bathing etc. There was no source of treated water taps in the household. The lack of proper sanitation facility in the village was an outrageous reality. Most of the households preferred open defecation. People did not have separate toilets in their houses. There were separate places which were open grounds for men and women to relieve themselves. Most of the women went in groups

of three or more. When the researcher asked them about building toilets in the house, most of the people said it was not in their priorities. Even in the households that were relatively better off than the others, open defecation was the norm.

Neerpur is highly unconnected from the adjoining cities and towns. There were no proper roads that led to the village from the closest city. The village has concrete roads at some places. Most of the roads that connect the village to other sub- towns is non-existent and passes through the fields. A road has been built that runs next to the dam on the river. However, when the level of flood is stronger, the road gets submerged. All important means of communication such as post- offices and telecom services are located away from the village. The village does get a constant mobile connection on all networks. It is a dominant and emerging mode of communication widely used by people in the village.

Most of the households in the village use the traditional mud *chulha* instead of cooking gas. Even in the households that receive the LPG connection, the dominant mode of cooking continues to be the mud *chulha*. Most of the households in the village have a regular connection of electricity. Although the supply of electricity is irregular and limited for a few hours only in the households, the prime purpose of electricity is for agricultural use. At some of the places, households could be seen utilizing the solar energy for cooking and electrical purposes. It is mostly under private initiatives and there is no direction from the government for the same. Most of the households own a bicycle which they use to travel in and out of the village. More than twenty households in the village own a motorbike also however there is no petrol filling station in the village. The nearest fuel station is five to six kilometers away from the village.

During floods, a major section of the village remains submerged under water. The transport system is halted. The roads which are mostly the kuchha roads are also submerged. The life comes to a standstill. Houses that are located in the lower region of the village get submerged in the floods. The people whose houses get submerged in the floods take shelter in other government buildings such as schools and primary health sub center. Even after the floods, the mud houses in the village take time to recover and dry up in the sun. The supply of drinking water stops during the floods as the hand

pumps and wells get submerged too. Even the electricity connection remains stranded for a long time during floods. The life in the village is seriously disturbed during floods. People in the village blamed floods as adding to their burdens already. Kripal Yadav, a sixty-three year old man, shared with the researcher his understanding of the conditions in the village with the help of a mythological story. He said,

“एक बार शिव भगवान ने पार्वती मां को यज्ञ करने के लिए कुएं की ईंट लाने को कहा। पार्वती जी धरती पर एक गांव में गईं। वहां देखा तो दो कुएं थे, जिसमें से एक पक्का कुआं पक्का था और पक्की ईंट का था जबकि दूसरा कच्चा कुआं और उसमें कुछ पक्की ईंटें लगी हुई थी जो बिखरी हुई थी। पार्वती जी ने सोचा कि नया कुआं क्यों खराब करें इस टूटे कुएं से ही एक ईंट निकाल लें। उन्होंने एक ईंट निकाली तो कच्चा कुआं ढह गया। जब शिव भगवान जी ने देखा तो उन्होंने पार्वती जी से पूछा कि तुमने ऐसा क्यों किया तो पार्वती जी ने कहा कि वो पहले से ही खराब था और उसमें ईंटें भी कम थी और गिरी हुई थी तो मैंने एक और निकाल ली। अच्छे वाले को क्यों भला खराब करे। शिव जी मुस्कराएँ और कहा कि देवी, अगर आप अच्छे वाले से कुएं से एक ईंट निकालती तो दोनों कुएं बचे रह जाते। यहां की भी यही हाल है हर साल भगवान कुछ ना कुछ निकाल ले जाता है। और जो भी बनता है वह कच्चे कुएं की तरह ढह जाता है।”

*Once the Hindu goddess Parvati was asked by Lord Shiva to bring a brick from a well to perform a ritual. Parvati came to earth in a village. She saw two wells there, one was a well built strong well and the other a shattered broken well. She picked a brick from the latter. The moment she took out a brick, it fell down. When lord Shiva asked her why she chose that well and not the other one, Parvati replied that it was already a weak well and there were bricks lying outside while the other one was a strong well, why ruin it. To this lord Shiva said that if she had taken the brick from the*

*stronger well, it would have kept both the wells functional for the people. Our village is like the shattered well. God every time takes away a brick from the village and whatever is built is converted to ruins.*

This narrative conveys in the best possible way the sense of hopelessness and despair among the people with regard to the situations created by the floods in the village. The physical assets in the village are in a merciful situation and lag behind the development in other areas by decades. The repeated floods in the village have put a halt at the possible opportunities of progress and development in the village.

The asset base in the village is in an awfully dismal condition. The infrastructure and resources are devoted to the sustenance of conditions prior to floods. The asset base is to mitigate the impact of floods on the existing situation. The assets as we know are important to strengthen the livelihoods base of the households. The various assets enable a household to pursue various livelihood strategies present in the venue, to develop and promote alternative livelihood opportunities and to ensure a stable and regular livelihood base of the people. The natural assets in the village are severely impacted by the floods in the village. The land largely remains under- utilized and the crop cycle is delayed leading to reduced productivity. Further, livestock are easily diseased during and after the floods. It is not difficult to understand that natural assets in such a scenario are difficult to maintain or sustain in a healthy condition. The development of new livelihood strategies remains a distant dream. The human assets of education and health are also thwarted under the dilapidated infrastructure in the village. The primary schools are ignored by the administration as well as the people who rather want to employ their children in other works. Lack of awareness efforts taken by the government are reflected in the uninformed opinions of the people towards education. The health infrastructure in the village is in a poor condition too. For every small excuse, the people in the village have to go to the city hospital. There are no skill development programs that could possibly enable individuals to adopt alternative livelihoods and make a living.

The social connections and bonds among the people in the village are important to share the agony and pain caused by the floods. The sympathetic sentiments shared by one person in the village were echoed by all other people in the village. The lack of monetary savings with the people prevented the establishment of strong self help groups in the village. The self help groups that existed in the village had frequent cases of people defaulting at regular payments of money. In a village where the economy is stranded because of the recurrent floods, it is not difficult to imagine that self help groups shall be difficult to achieve. The debts and borrowings of the people prevent them from investing or saving into different avenues. The financial assets remain on ever low in the village.

While the assets are important to cultivate ground for seeking various livelihood options in a place, in the situation of recurrent floods, the asset base makes it challenging for livelihood to be promoted. The assets when seriously undermined make it difficult for livelihoods to develop and emerge as a real possibility. The recurrent disaster seriously disrupts the possibilities of the promotion of livelihoods through assets. Keeping assets at a forever low does not do anything to the existing livelihood options. Disasters and especially recurrent disasters are not a possibility that is taken under consideration when arguing for the asset analysis as the bedrock of looking at livelihoods. Recurrent disasters such as recurrent floods in this case affect the living population and the region in ways which are different from those affected by sudden disasters. The reaction in places affected by recurrent disasters is to switch to a sustenance mode where the focus is to not rebuild or shift but to survive. This is to say that since the floods strike every year, the challenge is to mitigate its impact and to adapt to it. The asset base in the village is highly underdeveloped. It does not perform any of the stated duties towards livelihood. The livelihood which is important to maintain stability in the lives of the people and to sustain their living is seriously compromised by the weak asset base and the recurrent floods in the region. It becomes then pertinent to ask whether the asset based analysis is appropriate in understanding the livelihood base in a situation affected by recurrent floods. The next section examines the limitations of the Sustainable Livelihood framework in the case of recurrent floods in Indian context.

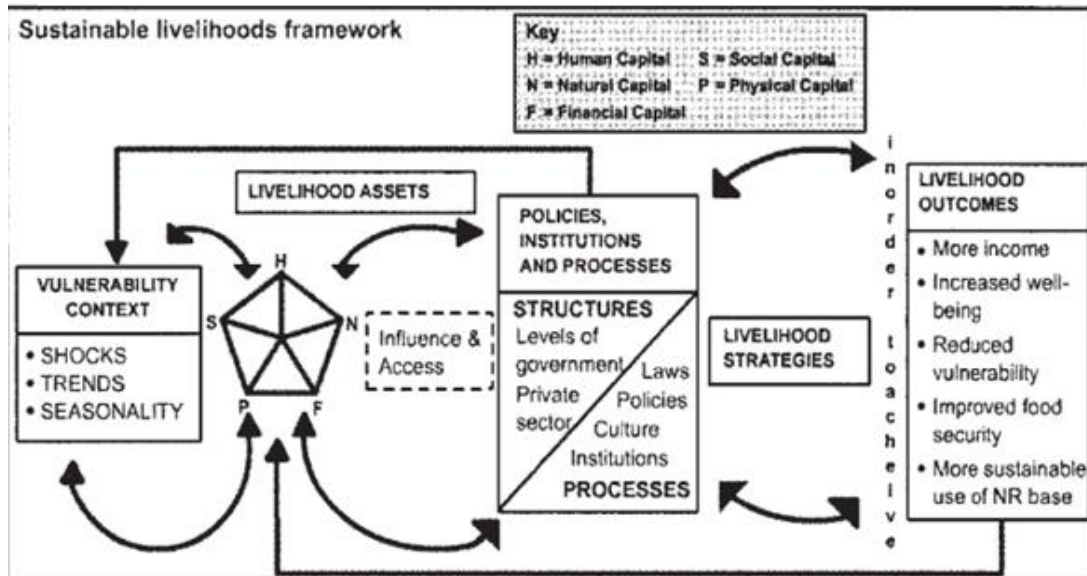
## 5.6 Recurrent Floods and the Sustainable Livelihood Framework

We have seen that the recurrent floods in the village have a devastating impact on the livelihoods of the people. The asset base of the households remains largely under-developed and under-utilized. The people in the village continue in a situation of chronic vulnerability because of the constant state of jeopardy in which livelihood persists. The weak base of the assets and reduced opportunities for strengthening them, considering the recurrent floods in the village, posit less chances of building livelihood strategies. The government support in terms of building alternative livelihood opportunities, promoting self-employment and enhancing the existing options is absent from the village. The program launched in 2011, National Rural Livelihood Mission (NRLM) which is a resurrected version of the *Swarnajayanti Grameen Swarojgar Yojana* (SGSY) has selected several districts in different states of the country. The district of Siddarthanagar is not included in the list.

If one were to understand the promotion and development of alternative livelihood strategies and enhancing the existing livelihood options in the village through the lens of the sustainable livelihood framework, there are several challenges and issues that confront the implementation of the framework. The foundational idea behind sustainable livelihood framework is to eradicate poverty (Solesbury, 2003b). In the sustainable livelihood framework, the understanding of vulnerability brings into its core three contexts: the shock, trend and seasonality. It comprises trends (i.e. demographic trends, resource trends, trends in governance), shocks (i.e. human, livestock or crop health shocks, natural hazards, like floods or earthquakes, economic shocks, conflicts in form of national or international wars) and seasonality (i.e. seasonality of prices, products or employment opportunities) as the various vulnerability contexts (Kollmair and Gamper, 2002).



Figure -5.2 DFIDs Sustainable livelihoods framework



Source: Kollmair and Gamper, 2002.

According to DFID, “The framework depicts stakeholders as operating in a **context of vulnerability**, within which they have **access** to certain **assets**. Assets gain weight and value through the prevailing social, institutional and organizational environment (**policies, institutions and processes**). This context decisively shapes the **livelihood strategies** that are open to people in pursuit of their self-defined beneficial **livelihood outcomes**” (Kollmair et al., 2002). The sustainable livelihood model is suitable for promotion of sustainable livelihood that can stand against the vulnerable context of shocks, trends and seasonality. The idea is to enable, enhance and strengthen various assets that households must have for sustainable livelihood. The main concern in the development of this model has to been to eliminate poverty. Within the vulnerability context, it takes into account disaster scenarios and livelihood analysis in such situations.

If we look at the situation in the case of recurrent floods in Neerpur there emerge serious challenges and limitations to the model from the field. The understanding of the vulnerability context in this framework takes into regard seasonality as one of the prominent aspects. The recurrent floods in the village are seasonal disaster that cripples the livelihood situation in the village. This seasonality of disaster as we have seen in this chapter is not limited to the actual period of the event but continues even after the

floods are over. The effect in the form of water inundation in the field, delayed crop cycle, restoring of basic amenities and facilities and deteriorated health and tackling diseases continue even after floods are over. The narratives from the field endorsed a continued engagement with the vulnerability arising from the floods. In such a situation, the assets (human, physical, financial, social and natural) remain in an abysmal condition.

The access to these assets in the context of recurrent floods in the village by the stakeholders remains a challenge. Their utilization and employment of assets to generate and develop livelihood within the context of floods is severely limited. The natural assets become a liability as emerged in the field instead of providing security and stability to the household. The continued effect of the floods on the land and the agricultural production makes farming an unprofitable activity. The crop cycle is disturbed because of the water inundation which further hampers the agricultural pattern. Similarly, livestock, which is a major source of livelihood for women headed households in the village, suffer immensely because of the recurrent floods. Livestock are a major component of natural assets. However, when diseased and infected because of the floods and a lack of regular veterinary services in the village, livestock add to the household expenditure. The assets that were to contribute to the economic stability of the household in the context of recurrent floods become a burden.

The social capital or assets also emerge as fragile in the village. The context of recurrent floods perpetuates a situation of continued penury and poverty in the village. The caste and gender networks help households to find support within their caste community and gender groups. But in terms of translating this support in the sustenance of livelihood, the social assets are of little use. The situation in the village depicts that social assets are inadequate and inefficient in tackling the challenges to livelihood of the households. Human assets are the worst impacted in the village because of the recurrent floods. The recurrent floods uphold a situation in the village where lack of opportunities for development of skills and inadequacy of basic facilities (schools, healthcare etc) force people into unskilled and informal work. A sense of hopelessness prevails with regard to the value of developing human assets in the village. The schools and hospitals

suffered from negligence in the village because of the recurrent floods. Further, the condition of the physical assets in the village is also poor because of the situation of misery arising from recurrent floods. Financial assets also suffered in the village as a major amount of expenditure was spent on dealing with the consequences of floods in the form of health issues, investments in land and livestock and corrections in houses, vehicles etc. The narrative from the village depicted that the rising debt and weak asset base went hand in hand.

Clearly, the access to the assets in the vulnerability context in the village is severely hindered. It is important to note that the institutions and processes that are responsible for strengthening the asset base for the development of livelihood are also skewed. The situation in the village shows that the policies and programs such as Crop insurance schemes and NRLM do not include the village. The policies that seek to provide the basic subsidized food ration and old age, widow and disability pension are present in the village but they aim at mere survival. They do not enhance the standard of living. The policies that provide livelihood, development of skills and opportunities are absent from the village. In the lack of these institutional efforts in the form of policies and programs, the asset base remains underdeveloped.

Consequently, the livelihood outcomes that emerge from this combination of weak asset base and institutional mechanisms in the context of recurrent floods are unsurprisingly miserable. The situation in the field depicts that the income of the people is stuck between struggle and survival. The income helps them to barely struggle against the adverse situation and survive for the next floods. There is no sign of progress and development that might improve the situation in the village. Migration from the village is an increasing trend yet lack of resources keeps them fixated in the village. The overall situation of the recurrent floods severely handicaps the livelihood outcomes.

It becomes important to reassert that the sustainable livelihood framework has at its root an imagination of poverty as the cause of vulnerability. When this framework is adopted in a field where poverty is a consequence of recurrent disaster that seasonally exerts its effect on the inhabiting households, the picture of outcomes that emerges is different from what the model promises. The vulnerability arising from recurrent disaster

overwhelms and exhausts the asset base along with half-hearted efforts from institutions and policies that no form of development and promotion can be expected in the outcome. The skewed understanding of vulnerability from recurrent disaster prompts a dismal response of the Sustainable Livelihood framework when applied in the field. The need is to begin with fully grasping the vulnerability and risks that emerge from the recurrent floods, going beyond the limited understanding of livelihood by mapping economic, social and cultural spheres, to develop and integrate existing frameworks for successful prevention and mitigation of disaster. The specific context of recurrent floods demands that framework and policies take into consideration space and context specific aspects of vulnerability. In the village, poverty is only a symptom of the larger problem of recurrent floods that in turn have ramifications on the overall life and livelihood of the people. The village Neerpur and other areas like it that are under the impact of recurrent disasters deserve separate attention at developing the village and promoting livelihood strategies in the same. The development in the village has to be linked with the challenges posed by the floods in the village. The framework has to take into consideration the aspect of the interconnectedness of underdevelopment, poverty and recurrent floods in the village. These specificities have to be considered on priority in both the theoretical and practical framework for dealing with promotion and protection of livelihoods in areas prone to recurrent disaster.

The next chapter enhances the understanding of vulnerability from floods by looking at the social and cultural impacts.

## CHAPTER 6

### **FLOOD AND SOCIAL STRUCTURE: THROUGH THE LENSES OF CASTE, CLASS AND GENDER**

In Neerpur village, the hierarchies of caste and gender run deep. Chapter four discussed the social and economic profile of the village where it is evident that members of one caste group were found to be dominantly pursuing common livelihood opportunities. The Sahni caste group members are mostly boatmen and fish mongers whereas the Yadav caste group pursued agriculture and livestock related works. Members of both the caste groups and others also pursued daily wage work in the nearby areas. The dominant caste group in the village is the Yadav caste, though numerically members of Sahni caste group are more. The gender hierarchies in the village are also visible, in the everyday life and it shall be explained in detail in the following sections of this chapter. This chapter explores the differential impact of recurrent floods on the people of the village owing to their caste, gender and class location.

Disasters are perceived as an equalizing force that does not discriminate among people. The differentiating structures, social and economic, and locations of the people are already the basis for differential impact of the disaster on people. The social and cultural institutions and norms in a society create categories and differences among the people on the basis of caste, gender and age group. The vulnerabilities of the people in the aftermath of a disaster are accentuated on the lines of these social differences. The vulnerability of any physical, structural, or socio-economic systems to a natural hazard is its probability of being damaged, destroyed or lost (Birkmann, 2008; Pistrika & Tsakiris, 2007; Alexander, 2006; Dixit, 2003). The degree of vulnerability is defined by factors such as socio-economic status, differences in wealth, occupation, caste, ethnicity, gender, disability, health status, age, immigration status (legal or illegal), the nature and extent of social networks, and so on (Mohammed et al., 2011; Birkmann, 2008; Khunwishit, 2007; Fothergill & Peek, 2004).

Understanding a disaster through the social structures and inequalities makes for interesting theoretical study. The expansion of the vulnerability approach to include

social structures in looking at the vulnerabilities of the populations has linked the study of a disaster with social norms, rules and hierarchies in a society. Scholars have looked at various socioeconomic hierarchies and advantages to assess the vulnerabilities emerging from a disaster. Racial discrimination in some societies has contributed to increased exposure to disastrous situations as they are not easily accepted in open neighbourhoods and have to stay in ghettos. Lower class especially among the excluded racial group has to stay in hazardous neighbourhoods which are prone to disasters (Ringquist, 2005; Wilson, et al. 2012 Bullard, 1990). Minority religious populations are also often ghettoised together into unhygienic and hazard prone areas. Several scholars have also explored the vulnerabilities that emerge when gender intersects the caste and race. Women are constrained from accessing resources and facilities as freely as men. Further, the gender based division of roles complicates and assigns them at a lower position vis-a-vis men in the society. Scholars have suggested that women are often more vulnerable in the situation of a disaster because of their unshared care giving duties which continue even during the recovery phase (David and Enarson, 2012; Enarson and Morrow, 1998; Fordham, 1998; Fussell, 2012; Jenkins, 2012; Morrow, 1999; Paxson et al., 2012; Reid, 2012). The old aged members in the household are also disadvantaged over younger members during a disaster. The lower income households also suffer more during a disaster because of the destruction of social networks and informal economics (Reid, 2013). Households with children face unique problem in settling down after a disaster. Scholars have stated the problems of psychological trauma and stress that children suffer from after surviving life threatening events, problems of behavioural changes and disruptions in education (Stuber, et al. 2005; Fothergill and Peek, 2006; Peek and Stough, 2010; Reid and Reczek, 2011).

Scholars have also written about the persistence of social inequalities and structures in a disaster struck society. The social structures of gender, class and caste have been found to be more steadfast and permanent than others (Fritz 1961; Oliver-Smith, 1996; Tierney, 2007; Ray-Bennett, 2009). In the village Neerpur, the societal structures and norms on the lines of gender, caste, class and age group have become crucial. The impact of the recurrent floods in the village varied on the lines of the hierarchies that run in the society. The members of the lower caste community suffered more from the

repeated floods, in the village, as compared to those belonging to the upper castes in the village. The women in the village on a whole and lower caste and old women specifically were found to be more vulnerable, to recurrent floods in the village. The children and aged members require special attention; during recurrent floods, as they remain dependent on others, during and after a disaster.

In this chapter, the differential impact of the recurrent floods on the people belonging to various social categories is analyzed, through the narratives of people. It also analyses the coping strategies and community resilience actions that are adopted by the people in their response to the recurrent floods. Finally, the last section proposes to understand the different emotions and experiences that are unique to the people because of their position, especially those belonging to lower income and caste categories, vis-à-vis recurrent floods. The feelings of stigma and humiliation were rampant among the people, in the village which could be sensed in different experiences that they chose to talk about.

## **6.1 Differential Impact of Recurrent floods**

The village Neerpur has a diverse social structure with its own merits and demerits. While people belonging to different caste groups, rally together in times of trouble for the entire village, the inequalities and norms pertaining to gender, caste and class hierarchies continue to persist. The village as we know has a lower land and higher area where the impact of flood is differentially felt. The lower income households are more vulnerable to floods, because most of them have their land in the lower level. In the following section, an exhaustive analysis of the differences in multiple vulnerabilities that people belonging to different social categories face is conducted.

### **6.1.1- Members of Lower Castes and Lower Income Households**

The village Neerpur has rampant poverty, among different households. Most of the economically backward households can be found, across all castes. Lower income households do not belong to particular lower castes. However, the richer households or upper class households come from specific caste groups only. They are very few in number and enjoy higher economic status in relation to the majority of lower income

households. They mostly belong to Yadav and Sahni castes. These caste groups, as we have seen earlier, fall into the backward caste category, in the state and central list in the country. The members of these two caste groups are numerically and politically dominant in the village. The majority of the members of these caste groups are economically backward dependent on agriculture and fishing for their livelihoods. Most of the lower caste or the scheduled caste people in the village are also lower classes. Not a single household from lower caste belonged to the upper class or richer household, in the village.

There are several concerns and issues that increase the vulnerability of the people, from lower castes and lower classes, even before a disaster. The National Dalit Watch of National Campaign on Dalit Human Rights mentions a template or list of indicators of social exclusion in the case of a disaster in their report “Addressing Caste Discrimination in Humanitarian Response”, 2011. The list is a comprehensive one with most of the crucial indicators part of the list (See Appendix -1). The report is to provide guidelines for mapping vulnerabilities arising from caste based discrimination (CBD) in South Asian context, especially in India in lieu of the disaster. It also provides the guidelines for effective action to be taken to eliminate caste based discrimination in Disaster Response- Disaster Risk Reduction (DR-DRR) by the International Humanitarian Stakeholders (IDS). Keeping in mind, the indicators in the list, one can analyse the conditions of the people belonging to the lower castes and the lower class in the village.

### **6.1.2- Location**

The location of the person in a particular geographical setting adds much to the vulnerability during and after a disaster. In a study conducted in Miami and Luisiana after a hurricane, it was found that in socially and economically vulnerable residents tended to stay in environmentally hazardous areas. It kept them vulnerable to future disasters also (Elliot and Pais, 2010). In the village, the upper level of the land is closer to the dam. After the floods, the lower level of the village stays inundated, for a long period of time. The agricultural land in the lower level of the village especially is submerged for long, even after the floods. Most of the poorer households and lower



castes reside in the lower level of the land, this covers a large area of the village and many households are based here. There are no proper mechanisms to drain water out from the lower level of the village. Even after the water drains out, the vulnerability to diseases remain because of the dampness and moisture in the surroundings. Water borne diseases are a common case here, where most of the people fall sick especially. The households in the lower level of the village struggle for maximum duration against the floods and its impact in a year. One of the informants from the lower region in the village ‘Shambhu’ told the researcher,

“पानी देर तक टिकल रहत हैं, एक त  
चढ़ी भी पहले पहल और उतरी भी सबसे  
अन्त में”

*The Water stays for a long time. It  
comes first leaves the last.*

Clearly the factor of the location of the lower caste and lower income households in the village has much to contribute to the vulnerability of the residence. Unsurprisingly, the upper region of the village is relatively secure, as compared to the lower region. The flood water from the upper region is pulled towards the lower part of the village and the former dries up quickly after the flood. The residents here get much more time to settle down and recover from the impact of the flood.

### **6.1.3- Structure of the Houses**

The architectural design and structure of the house has a crucial say in the vulnerability of the residing members. In the region, under the impact of the floods, households with low altitude are more prone to submerging than the ones with high altitude. Most of the poorer households in the lower part of the village have single storey kaccha mud houses. Not just that the house has a weak structure which is too fragile to stand against the flood, the lack of the high altitude does not help in evacuating the interior of the house to the roof during floods. The residents of the lower part of the village have to abandon their houses and move to the upper areas. Their houses become dilapidated and

unlivable even after water has drained out. More often than not, the residents have to reconstruct their houses. However, due to the lack of any support of any credible infrastructure, the new houses are also made of thatch and mud. Even the cost that is levied on procuring mud, thatch, bamboo after the flood, when there is heavy demand, is unaffordable for most of them. The cycle of vulnerability does not stop.

#### **6.1.4- Limited Accessibility to Resources**

Most of the poorer income households persist in conditions of severe poverty, throughout the year. Their hold over resources in the village remains utterly constrained. The misery of the living makes several resources unaffordable and out of reach for them. It was found that most of the lower caste and lower income households found it difficult to maintain the food stocks for future use. During the floods most of these households find themselves in shortage of resources. Even the households that maintain the food stocks find it difficult to preserve them during the flood. While the relatively better off households choose to move to the adjoining area, in the lack of medical infrastructure during flood, the poorer households suffer in disdain as the medical facility in the village are submerged. It is beyond their capacity to access the resources outside the village, as they are expensive. The relief that is made available to people after the flood is also attained first by the economically better off households and higher castes in the village.

#### **6.1.5- Political Influence of Non Dalits**

We know that the village has Yadav and Sahni are politically dominant caste groups. The political participation of the lower castes is marginal, in the village. The upper caste groups in the village enjoy closer proximity to the information regarding government initiatives, policies and programmes in the village. Since most of the government positions are also occupied by the upper castes, the discrimination against the lower castes persists. This nexus between the government officer and the politically active castes becomes especially important in procuring a job card. The lower incomes households that belong to upper castes receive their cards and other benefits more quickly, other than the lower castes because of political clout and castes solidarities. The members of the lower castes are also fewer in numbers. This prevents them from

posing threats to the politically and numerically dominant castes. One of the informants Guru Charan, belonging to the lower caste confided in the researcher,

“ इहा सब काम परधान के साथ फिक्स कर तबही काम होवे वरना कामों ना मिले मनरेगा में। ज्यादा काम ओ पावे और उनही को होवे जो परधान के खास बाटेय, बाकी के लिए तो बस इधर उधर कह के टाल देता है परधान। गांव में राहत के लिस्ट में नाम के बरे भी परधान के रूपया देई पड़त है। पैसा और रिश्ता ना हो तो बड़ी दिक्कत आवत है। अपनन लोगन के तो एकई घर के दो घर के नाम से चढवाई देवे, हमन के नियम कानून बतियाई लगत हैं। अदर पैसा ना देई जा तो राहत लिस्ट में नाम ना आए और बाद में लिस्ट में नाम चढवाइए बरे बहुत भाग दौड करई पड़त है।”

*Here only those get work under MGNREGA who are close to Pradhan. Even they are employed for more number of days. After every flood, for receiving your name in the relief list you have to bribe the pradhan. If you don't, you won't get your name in the list. For his closer and caste people he will add two households under one, but if we go he blabbers about rules. You have to run after the lekhpal a lot to get your name in the list.*

The importance of including the name of the household in the list can be gauged from the fact that the MGNREGA and National Food Security Scheme (NFSS) are the few options that the people in the village have for procuring livelihood and food grains after the floods. It becomes even more difficult for the people belonging to the lower caste to attain more days of work or their name in NFSS because of the political clout of the Yadavs and Sahnis. The discrimination is common, in the distribution of relief goods, during the floods where the priority is given to the people of Yadavs and Sahni caste groups. In conversation with some of the members of the lower castes in the village, most of them talked about this discrimination as almost natural to them. They knew that it was not fair, but did not believe in complaining. They gave up on this issue because of the political and numerical dominance of the Yadavs and the Sahnis. There were

times when they reported that the relief products were limited and did not even reach them.

The position of the lower castes vis-a-vis the dominant caste groups remains vulnerable throughout the year. It exacerbates during the floods because of the discriminatory norms and structures built prior to the disaster in the society. The situation of floods does not bring any social change in the social structures in the village. The flow of resources and services proceeds through the ladder of social hierarchies in the village, without any opposition. The scale of vulnerability increases as one step's down the caste ladder and the caste solidarity becomes even more marked leaving differential response post disaster.

#### **6.1.6- Lower Wages**

The weak financial assets contribute to poor livelihood opportunities for the households in the village. This however has undue impact on the lower caste and lower income households in the village. The lower wages from the limited economic opportunities in the village is a harsh reality, for the lower caste and lower class households in the village. The sheer poverty in the village and the limited number of economic opportunities lead to the imbalance in the demand of work and its supply ratio. People ready to take up work are more in number than the actual work available for the people. This is also one of the factors behind the increased disguised employment in the village. During the floods, it is very difficult to find work for several days in a row. After the floods, a lot of people look for jobs in and outside the village. The demand for work shoots up after the floods. This consequently leads to reduced wages as more people are available for the same work, during the crisis, increasing the vulnerability of the people.

The lower wages are especially a problem for the lower caste and lower income households. After struggling with the shortage of work and the priority given to the dominant castes, the lower caste and lower income households get the work which does not often earn decent wages to them. The poorer households fail to maintain or keep savings, as the everyday expenditure along with the additional cost that floods levy on them exhaust most of the savings. The lower wages are insufficient for them, to match up to the requirements posed during and after the floods. The re-constructions of

houses, sheds, health needs for family members and animals and transport costs are some of the additional cost that arises after floods. They have to wait for a longer time as against the dominant castes and relatively richer households to recover from floods to a non- disaster routine.

Often, because of the low wages, a household has to involve all the members, young and old, into work. The male members of the household sometimes migrate to cities in search of work. Migrating outside also does not add much to the income of the households back home. The expenditure of sustenance in the city for one member is high. The wages are not sufficient, to sustain the family back in the village. The recurrent floods in the village keep these conditions worse for a continuous period lasting up to three months from July to September. The impact of the recurrent floods lingers on till December. The lower wages in the village and shortage of diverse livelihood opportunities multiplies the vulnerability of the lower caste and income households, throughout the year. Instead of building measures for the next floods, they often end up coping for floods and its impact throughout.

### **6.1.7 Non Participation in Decision Making**

A major problem that the lower caste households face is with regard to the non inclusion in the decision making in the village. The lower caste members face discrimination among the dominant caste households. They are not numerically, economically and politically dominant in the village to raise their voice in the village decisions. Belonging to the lower caste, the social norms in the village govern the relationship between different households. They often have to negate their presence among the upper castes. This means that they do not voice their opinions whenever the concerns of the village are flagged off. Women among the lower caste are the lowest in the hierarchy where their concerns are the most silenced. The people belonging to the lower castes have to manifest their inferior social status in their behaviour by not over ruling the decisions of the upper castes. The latter do not perceive them as equal in intellect. They think them to be unworthy of respect and dignity. This bias is so deeply entrenched in the society that often the lower caste households do not protest this

perception. They accept this subjection hesitatingly and work to sustain the hierarchies submissively.

If social capital and harmony among the residents was to be an asset for mitigating the impact of disasters, the caste hierarchies attack this in the most severe way possible. The lack of participation of the lower castes from the decision making ignores their needs and concerns. While the dominant castes often come together to help each other during floods, for example in finding proper shelter, taking care of animals together, searching for work together and community cooking in shelter, the lower caste members are left on their own. The practice of untouchability in the village also prevents their participation with the dominant castes during floods. Since most of the members from the lower caste belong to the same economic class, they often have nothing to share from each other except emotional support and sympathies. They stay together forced out from participating with others. In conversation with the researcher, Kallu Ram said,

“वैसे तो सबके हालत एकई जैसे बा लेकिन बिरादरी के बात आवतइ उच नीच बीच में आई जात है। अछ्छी अछ्छी बात करइ वाले लोग अपने बिरादरी के साथ लेई लागत हिन, चाहे आदमी कितना भी गलत क्यूँ ना हो। बात ज्यादा उलझी त मारपीट के नौबत तक आई जात ह। इलाका त वैसेहु हमन के लिए दिक्कत देत है लेकिन जौनु सुविधा मिलबुउ करि ओपर हमन के सब के बाद में हक बाटइ। प्रेम भाव भाई चारा धीरे धीरे अब खत्मई समझअ।”

*Usually everyone's condition is same in the village but when it comes to the question of equality, caste plays important. Those who talk ideal in the village they also take their own caste side even if their own person is wrong. If you argue with them, it leads to fighting. As you know that region limits our accessibility over resources*

*but whatever comes through relief we all are more vulnerable to access because we belong to lower caste. In the village the social harmony inter- castes has gone.*

The caste hierarchies and the class differentiation clearly destabilize the uniform impact of the recurrent floods on the village. The lower economic profile of the households have less capacity to deal with the floods as against the better-offs in the village. In the face of the repeatability of the floods, the richer households in the village have better coping mechanisms, better security and mitigation plans against the floods. They are better prepared to fight the impact of floods. The caste hierarchies deprive the lower caste members, from participating in the village affairs equally. While they suffer more from the floods, they fall at last in the hierarchy in decision making. The government schemes and programs for welfare are very crucial for the well-being of the very poor people in the village.

The priority however in these schemes is decided by the officer working closest to the ground who often is driven by the social norms more than the intentions of the plans. In the everyday lives, the lower caste people have to bear with lower wages and less work as compared to upper castes. Amongst the poorer households in the village, the households belonging to the lower castes are treated differently from others. The time taken by the lower caste households to deal with the floods is much longer than the upper castes. The lower caste households have lesser stocks and savings which they can put to need. Especially because of the perpetual poverty, the floods worsen the everyday miseries of the lower caste households. The additional burden of the floods keeps them in a state of miserable poverty. The entire village treats the floods as a phenomenon which they have to struggle with irrespective of anything. The lower caste households have the same problem, only with additional discrimination emerging from the social structures and norms to face. Apart from the lower caste and lower income households, women are another major category of people that are more vulnerable than the rest.

## **6.2- The Struggles of Women in Recurrent Floods**

The gender hierarchies in the society are an overwhelming reality that intervenes in all affairs. Disasters are considered to be the altering moments where natural interventions disrupt the existing social structures in the society. However, on the reverse, the people are seen to be acting even in the crucial moment, keeping in mind the social norms and concerns. Further, after the disaster these norms are deciding in relief and coping up strategies also. Enarson and Morrow argued that the disaster do not unfold in isolation. Disaster “affirms, reflects, disrupts and engages with gendered social relationships” (Enarson and Morrow, 1996). The gendered division of labour where women have to take up the care and responsibility of the children and old is a social norm in the society. During a disaster, it has been observed that it only accentuates burdens on the women, where they have to take care of the dependable members and look for selves (Peek and Fothergill, 2008). In poorer households, women take up work outside also and yet continue to perform care responsibility unshared. The intersectional analysis of women across castes, class, age groups and ability complicate the understanding of the experience of women during a disaster. In this section, the researcher attempts to bring out the differential and increased vulnerability of the women in the village. From the discussions and interviews held with women in the village, the impact of the recurrent floods on the women is highlighted.

### **6.2.1- Gendered Roles in the Village**

The patriarchal setup prevalent in other parts of the state and the country has the leading edge in the village also. As noted previously, the recurrent floods in the village does away with the shock or trauma of the disaster. The floods are an important source of concern of the people in the village. The social structures and norms adapt themselves to the conditions of floods and afterwards instead of radically changing or altering itself. The gendered division of roles and labour in the society continues to persist unperturbed. During the situation of floods and afterwards, the gendered norms in the society govern the social life in the village. It is well known that the patriarchal structures in the society work to the bias of one gender over others. Women, in general



are treated as inferior beings as against the men in the society. They are denied equal opportunities in both public and private spheres.

Traditionally, women are confined to the private sphere in the household and not allowed to access the public utilities and resources as freely as men. In the division of power, in a patriarchal society, the structures are built and support a particular gender as against the others. The perception towards women and the roles designated to them are often governed by these patriarchal structures. These structures work to the detriment of women. Unjust in nature, they prioritise the needs and opinions of men over women.

In the village, while men took lead in earning the livelihoods for the households, women performed household work such as cooking, cleaning and caring for elderly and the children. Most of the households in the village struggled to make the two ends meet. In such a scenario, it was difficult to rely on the income of one person in the family. In most households, women helped the male members in the fields. They also took work under MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) or in other villages as construction workers. However, this does not lighten their burden from the work inside the households. The duties in the private sphere of caring, cooking and cleaning remain their responsibility unshared by the male members. Women wake up earlier than other members so that they can cook and clean before leaving for work. They also sleep later than other members to wind up the works, while other members rest. Thus, while women share the burdens outside with the male members, the duties inside the house are not equally shared. It is only daughters who then help their mothers in the works inside the house. Even during the floods, these duties do not disperse. In the relief camps and sometimes under makeshift arrangements for protection against the floods, cooking is ensured by women only. When the researcher posed the question about the sharing of work, they mocked at the question. They jokingly instead asked the researcher and said,

“और कौन खाना बनाए? परलय रहइ ना रहइ खाना हमही  
बनाउबई।”

*Who else will cook? Disaster or no disaster, we will  
cook.*

They do not get enough or equal time to look after their personal needs and concerns. The elderly and children are also dependent of the care taken by the women in the family. Male members do not participate in the care given activity as much as women. Some of the women in a discussion amongst themselves hinted that during floods, because of the lack of work outside, male members treat it as a vacation where they can retreat into shelters. They did not join in them in the care work or in cooking. One of the women Bhanmati devi said,

“पानी में हमन के काम बढ जाए। लेकिन एहेन लोगन के पास  
काम नाही रहे। जौनो करत रहत हिन उहाँ ठप्प हो जात है। सारा  
टाइम छत पर बैठ के आराम करत रहत है और ताश खेलत है  
और जन छुट्टी हुआ है ऐ लोग मनावत है। बच्चा बुठ्ठा लोगन  
सबके जिम्मेवारी हमार हो जात है। इहो नाही होत है की जब  
काम नहीं है तो बच्चोओन के देख लिए। सब हमनई पचेन के  
करई पड़त है।”

*In the flood, our work increases. These people have  
no work, whatever work is there that also stops. They  
just go and enjoy at the rooftop. They play cards in  
group there from morning to evening. They enjoy like  
it's a vacation. We handle the kid and the old. If you  
hand over the baby to them for two minutes, they  
never hold. Every work has to be done by us.*

Clearly, for women, men are freer as compared to them during floods. Irrespective of the inconveniences faced by all the members of the household, women are busier during floods. They do not get a 'break', as others. Initially, women were hesitant to discuss these issues as it was a matter of routine for them. They did not think they were worthy enough to be mentioned. They treated these everyday habits as obvious and did not expect any help from men folk. However when emphasised, they opened up and talked with details about their varying status in the family as against the male members. With reference to the work done by women outside and in the home, they hinted at the disregard the housework faces. One of the women mentioned,

“हमनन बहरुउ के काम करे साथ साथ घरो के काम करल जाई। रोटी सब्जी के अलावा इनोहनो के सेवा करल पडें। हम खेत जाबई, हुआ से आईब जा त खाना बनाबुओ करिब जा और देउबउ करी जा। सोवई से पहले मालिश और पैरो दबउबई। सारा टाइम त इनहिन पचे में लगा रहिल जा हमन।“

*I work outside as well as inside the house. Apart from making food, I also have to serve him. I come back from working in the field, prepare food for everyone and before sleeping, I press his legs for one hour while he dozes off.*

The unequal sharing of burdens between men and women in the society puts the latter under vulnerable conditions during the floods. Women are exhausted with the care and households work even during the floods. They do not share the work and enjoy equal freedom as men to take care of selves during the floods. Physically and mentally, they remain in a weaker condition as against men who are taken care of by the former. Their work often gets invisibilised giving them hardly any importance or attention.

### **6.2.2- Societal Restrictions and Challenges**

There are several other challenges that society poses to women which puts them in a vulnerable situation as against men. Women are perceived as the reservoirs of honor of the family and society. Women are bound by the social norms in the society, where they are refrained from participating in the public spaces as openly and freely as men. They have to take precaution about time and space they are accessing. It is often not permissible for women to move out on the streets late in the evening and night. The men can loiter on the streets for a long time. There is no social norm restricting their movement. Further, women are expected to be dressed in a particular socially sanctioned way to be able to access a public space. They are expected to not be out alone. They must roam around in groups or in the company of a male member. Even during floods and afterwards, these norms continue to govern the movements of most women. The accessibility to the resources and utilities available in the public sphere is severely limited for women, because of the social norms that control their movement and behaviour. This limitation increases their vulnerability to floods and puts them in a dangerous condition. These norms exist in the village uncontested. In the conversation with the researcher, women expressed their helplessness against these norms but did not seem to question them.

During floods, people get together on roofs of their houses or other higher platforms to take shelter. They gather all the crucial objects that they might need for several days such as dry clothes, candle, matchstick, utensils, storage boxes and food products. As stated previously, women get together to cook, secure expensive objects and take care of the children. Men and women often divide up into groups for most of the period during floods. Some of the women have stated the problems of being able to access proper spaces. A woman in her early twenties, told the researcher, about her experience, where she could not access the bathroom to change her clothes because all the men were sitting in the room which had the bathroom. It is not perceived as respectable for a woman to walk into a room where men are sitting together. Women also mentioned how they had to send their children for fetching objects that they need from the spaces occupied by men. Even when they want to talk to a male member, they have to send

across the message through some kid to pass it on to the respective person among the group. These everyday limitations that exist for women aggravate the situation for them during the floods.

Since the floods are seasonal in the village, they gear up for the floods early on. But even then the important decisions are taken up by men only. Women wait for the instructions from male members before they can take any step. Male members decide where to move the stuff to, when to do that and what all they take. One of the women mentioned about her experience where her husband was drunk and slept off when everybody else in the village was preparing to move to roofs of the houses. While she moved most of the things, she stayed with her husband who will not wake up. She kept sitting next to him, until he woke up after a few hours. She talked about her fear and concern of her husband and her children, whom she had sent off to the neighbours.

Women who belonged to the lower castes further had to keep in mind the presence of men of their community but also those belonging to the upper castes. They got together along with the women of their own castes only and did not mingle with the high caste women. In the village, it was strictly ruled out for women of lower castes to move in to the areas where upper caste men are present. During floods, they mostly stayed in their respective spaces and did not go out. When the researcher asked the women about their accessibility to the relief materials and to health services in the camp, they replied that if they wanted to go, they went in groups. Mostly, they avoided and the male members are sent. Most of the women did not question these hassles that they have to take care of. Some of them took pride in the security and honor they maintain. They mentioned about these problems as consequences, but did not therefore perceive that these must be challenged or overthrown. One of them said,

*“इत्ता त सबका करहिन के पडत है। इमा केहु के दोष थोड़ी है। औरत जात ना ध्यान रखी तो कौन रखए। मरद लोग आप काम करइ और हम आपन।”*

*One has to do all of this. This is not anybody's fault. If women will not care then who will? Men do their work and we ours.*

The situation is even more complicated with the women whose husbands have migrated out of the village. Women take lead in the households, where men have migrated. All the responsibilities of taking care of the cattle, children, elderly and household needs fall on them. The accessibility for them is even more limited for they often do not have anybody to send for their needs. One of the women told the researcher that sometimes they just go and get the work done amid the stares and taunts, but sometimes, they give up. Most of these women headed households are dependent on the family next door or a relative, so that they can stay with the latter's family during the floods. One of the women mentioned about the distant relative in the same caste, whom her husband had asked to take care of the family during floods, mainly to keep them with his own family. She said that since she knew he would come to fetch them, she kept waiting for him. While rest of the villagers around her left for a safer place, she waited for a long time until he came late in the night. She said while she could have left early, she did not want to risk the honour of the family for leaving on her own with the children would have meant treading the boundaries. Clearly, for women the societal norms loomed large, while deciding for the safety of the self and the family. Thus, the agency of women to take decision at the time of disasters is compromised and has to depend on the male support which increases their vulnerability.

### **6.2.3- Economic Challenges**

The position of women with regard to the control of economic resources impacts their vulnerability to floods in the village. Under a patriarchal setup, while women may join in earning, they may not be able to own the fruits of their income. The issue goes even much deeper than this. Since women are perceived to be inferior to men, the work performed by them is also obviated as not-up-to-the-mark. They are treated as lower than men in the labour market also where the labour performed by women is paid less. The work and the income of the male members are treated as primary and important while the perception towards women's work in the public sphere is seen as contingent and less worthy. Despite having a law for equal wages for men and women, the latter are paid less in reality. Because of the work crunch, women do not contest and accept whatever work is given to them especially in poorer areas. Further, the women who

have a family to take care often just have to give away whatever their income is to the head of the family. She is rarely the in-charge for spending the income of the family. This lack of control over economic resources especially puts them under vulnerable condition vis-a-vis others.

In the village, women who work for wages struggle with the unequal wages. In their conversation, they appreciated MGNREGA for some stability. When they seek work in other villages, they end up working the same hours for lesser money. Most of the women said they could not keep money they have earned from their work. Some of them gave it away to the elder members in the family and others to the male head. They did not have much say in the way money was to be spent. One of the women, Jamni Sahni, told the researcher that her husband kept all the money and spent it the way he wanted. Although the money was spent on the needs of the households but there was always some money saved for bidis and liquor. She said she could not save any money because he would take it all. The other women burst into laughter and revealed that they would not give away all the money. They would hide some money for their own use.

Women also talked about the way expenditure during floods includes money for liquor and bidis. They mentioned how money was spent on liquor but not on dry wood and fuel for cooking. Dry wood is more expensive than the wet ones but the latter is more unsafe for the one who is cooking. It causes much more smoke that makes breathing difficult while cooking. One coughs and chokes their way through cooking. Since it is the women who are mostly cooking, they do not bother much to invest in better fuel. Several issues that troubled women and require investment are often sidelined when the expenditure is controlled by the male members. Women themselves begin to put the needs and demands of other over their own. Even in the relief products they receive, food, clothing etc, chances are that they would first be spent on males and children and lastly on the women. This only aggravates their vulnerability. Floods only worsen this scenario.

#### **6.2.4- Health and Sanitation Issues for Women**

One of the most important concerns that affect women the most, especially during floods, has to be the health and sanitation related concerns. We know now that women

are not rendered equal attention and respect in the society as much as men. Their inferior status in the society puts their concerns and issues at the backseat. Health and sanitation is one aspect that gets ignored amidst different issues. In general, open defecation is a norm. Women have their separate space where they go together to defecate. It is unsecure for lone woman to go to relieve herself. During floods, the situation gets worsened to an extreme. For men, it is not much of an issue to find a place but women have to struggle to find a secure lone place where they can defecate.

Initially, women were hesitant to talk about the issue with the researcher. However, with the help of a female key informant, women began talking and revealed many issues they face. One of them women, Sarita Devi, talked about how during floods she struggles to find along with other women a private, dry and secure place where they could relieve themselves. She said that mostly these areas would be occupied by men or sometimes kids scattered and played in such areas. Dry areas are a rarity during floods. They either manage to find a less inundated area closer to the river or an abandoned wall. The situation at the shelter house or the relief camp is equally worse<sup>5</sup>. Another woman, Barfi Sahni, mentioned that for the organizers or leaders at the shelter house or camp, sanitation is an issue that is better left to the villagers themselves. They do not even talk about it. The key informant, who was an educated woman in her thirties, confirmed this.

The issue of menstruation was also never touched upon. Lack of female personnel made the issue invisible. Although there was an ASHA worker who frequented the village, floods only made her visit less often. For daily needs and concerns, the local government primary health care center was inadequate. They could not rely on the sub-center for most of their ailments. The lack of female personnel at the sub-center was a major handicap. It is because of this most women preferred to go to the civil hospital in the district for medical concerns. However, the visit would not be frequent but quick

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<sup>5</sup> The shelter house is usually located at the higher level in the village. The local disaster management authority establishes several shelter houses in the village for the residents which are known as *Bhad Shardhalay* or *shivir*. These camps are the shelter houses where the residents are rescued and placed during the floods. The primary school and the panchayat compound are the main areas which are used for shelter during floods. These places have fewer rooms and often get crowded quickly. Very small compartments are provided to people. It was common for people in the tents to break in fights during space appropriation and relief distribution.



enough. The travelling costs and the social hesitation in travelling alone made them wait for a long time until the situation gets worse and there is an urgent need to visit a doctor. The visit to the civil hospital was treated as an event where most women preferred to travel together in groups, so as to meet their respective doctors. Their priority was to manage the ailment on their own as long as possible, once it went out of hand, did they go to the civil hospital.

Floods aggravate the already poor conditions of sanitation especially for women. The ASHA (Accredited Social Health Activist) worker told the researcher that during and after the floods, most women suffer from urinary tract diseases. For menstruating and pregnant women, sanitation is a bigger problem during floods. Often with no outside support, women have to work out their own way. The ASHA worker talked about how it is very difficult to cope up for women after floods. Sometimes, the treatment of the ailments takes a long time. The government officer told the researcher that if the flood lasts for more than ten days, they provide for mobile toilet facility to the people. But when confirmed from the women in the field, all of them denied the availability of any such provision. Mobile toilet is not considered as a prime requirement during the floods by the government officers. Women mentioned about the difficulty for delivering women. It is very difficult for women delivering during floods to recover from the post-pregnancy effects. A lot of times the child does not survive the weather conditions. Women who are delivering often fall sick and take time to get well. The lack of privacy is a major constraint for women to prevent them from taking care of the self.

The inadequate functioning of the primary health care sub-center also puts women in a vulnerable condition. Especially for pregnant women, immediate medical health is unavailable. The center provides for minimal sickness only. It has no provisions for women struggling with urinary diseases, skin infections and sanitary products for menstruating women and other immediate help for pregnant women. Women talked about their struggle of tending for their children also at the same time. One of the women in her late 60s, Bina Devi, told the researcher, about the major complexities in the delivery of her daughter-in-law in the floods two years back. She said how she had to struggle to find a way to take her to the hospital in the city when she complained of

severe pain. It was her eighth month of pregnancy but during the preparation for moving to another place, she got hurt and had to deliver. Bina Devi said,

“हमन बहुत कोशिश करे ओके डॉक्टर के दिखावई के लेकिन इहां कोई बर्दोबस्त नाही हैं। ओके डॉक्टर के लई जात वक्त कश्ती भरी रही। कौनो आराम नाही मिला। बेचारी के बहुत झेलइ के पड़ा। इहां अच्छी सुविधा होते तो इ सब देखई पडइत का”।

*I tried a lot to take her to a doctor but here there was no provision. On the way, the boat was so crowded; she could not relax at all. She struggled a lot. If there was any provision here, all this could have been avoided.*

Despite several cases of this kind, the situation remains the same. The vulnerability of the women in the floods with regard to the health and sanitation concerns is a serious condition. Because of the recurrent floods and the situation not improving, women are doubly impacted by the floods. Even though women complained of bad conditions, some of them confided in the researcher that because of ASHA and existence of the Primary Health Center, things have improved. At least, they have the assistance of medical help in close vicinity. They also specifically mentioned the ambulance service started by the state government, popularly known as *one zero eight*<sup>6</sup>.

#### **6.2.5- Issues with Young girls**

There are many concerns that women face, young girls are especially vulnerable during floods. Although the researcher could not directly establish a conversation with young girls, but through the key informants, some of the issues of the young girls came out. The key informant conveyed to the researcher that while older women escape from sexual abuse during floods, younger girls faced it often. Floods create difficult

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<sup>6</sup> According to the official data, there are twenty emergency service ambulances available with the district. In the Nuagarh tehsil, the number of emergency service ambulance is six. Mangaldip has two ambulances in its close proximity which increases the accessibility of the people to the medical help during disaster.

situations in the village, where elders are often busy in preparing and moving to a safer location. Children are often left out to play when the water is at a slightly lower level. Young girls are quick to be a victim of abuse from elder boys and men in the village. Although women maintain caution and care to a greater degree, but according to the key informant, every year after the flood there is at least one incident of sexual abuse that is rumored to have happened. Such incidents are not reported to the police and are often resolved at the village level. In conversation to the elder women, they confirmed that they took special attention of the young girls so that they do not fall into any 'trap'. They said they kept them busy in some work, so that they don't have much time to trot around.

Young girls belonging to poorer households are especially vulnerable for they have to join their parents in the work outside. They work as child laborers, for they have no option but to support the family. Education is also a distant reality for most of them as they either take care of the siblings, while their parents are out to work or they too join for work. The recurrent floods in the village kept them out of the school for a long period of time. The researcher found that the incentive of mid day meals brought many female students to the school. The lack of proper education did not seem to bother many people in the village, especially for women. The floods left younger girls in a vulnerable situation as they were put under more pressure to take care of the family and the household. They have no access to quality education and not even given any priority for it.

### **6.3- Issues of the Elderly and the Physically Challenged Persons**

Another major vulnerable group that is found in the village is that of the elderly. Most of the households in the village belonged to the lower economic class. The elderly in the household continued to work and support the family for the longest time possible till they are able to work. In conversation to the researcher, one of the old women said,

“हमन का करिल जा बस आराम करी जा। बैठ बैठ के हाथ पैर में जंग लगत जात बाटड़। इहा उमर में हाथ पैर चले तबै परिवार कदर करै वरना कौनउ बुठ्ठा बुठिया के सम्हाले”?

*What rest will I take? If I relax, then my hands and feet will start rusting. In this age, if your body functions then only the family values you. Otherwise, who will take care of the aged?*

For most of them, it was not an option to retire from work and rest. Almost all the elders in the village worked and helped the younger ones either in field or in the household work. With the ageing, they suffered from many ailments such as arthritis, excessive coughing and body ache. They frequent the primary health sub center often. The chemist handed over to them mostly the pain killers or other antibiotics. For the elderly in the village, a major support for them came from the Old Age pension scheme that they received from the government which was about three hundred rupees per month. This kept them financially independent. One of the old men mentioned that while he gave away most of his pension for the household expenditure, he kept some for his medicines and *bidis*. The amount is highly insufficient to meet their requirements such as food and medical amenities. During the floods, they are last in the priority to be taken care of. The weather conditions and floods for a prolonged period often make them sick. For women and men, amidst the work load during the floods, the elderly are last in the priority. Most of them complained that they have to manage on their own. One of the old women told the researcher,

“हमही बोल देहित हैं कि तुमही लोग निकल जा हम आउब पीछे से। हमार का बा उमर होई चली बा। इस बुढापे में अमर होई के का किहा जाएं? बच्चा जवान लोग ठीक रहि हमन पचन के उमर ऐसेहे ही बढ जाएं।

*I tell them to carry on and go, I will come slowly.  
What will happen to me? In such an old age, what  
will I do being immortal? The kids and men should  
be well, I will live many years through them.*

Everybody in the village seemed convinced that the elderly must be saved but in the end, after rescuing others. For them, more difficulties were about procuring medicines and proper healthcare from the center. During the floods, as most of them suffered from ailments, their health only gets worse. The lack of proper healthcare facilities in the village and especially during floods makes them weak and dependent on others. It puts them in vulnerable condition as against the others.

Similarly, the physically handicapped people in the village were often left alone to look after themselves. There were not many handicapped people in the village. It was a miniscule population of three men. Two of them had difficulty in walking, one walked with the help of a support stick. The floods put them in dangerous situation over others as there were no provisions for them to find a convenient safe place. Most of the platforms which were safe were at a higher level. All three of them talked about being used to the conditions now and that they have managed to find their way through the help of their family members and friends. For them, facing floods every year is a struggle they are bound to fight and have no control over it.

The vulnerability of the different groups varies according to their social and economic position in the society. The impact of the flood differs from persons to persons and groups to groups. The concerns that are crucial for women may not bother men so much. Similarly, the lower status of the lower castes in the society puts them in a jeopardy vis-à-vis the floods. Similarly, the elderly and the physically handicapped face the floods differently from the young and the able-bodied. While the natural disasters do not discriminate, the social and economic differentiation among the people in the society creates varying vulnerabilities and impact on them. In the case of the recurrent floods, the situation is even more stringent as the social realities adapt to the conditions during floods. The floods do not alter the social realities because of the lack of uncertainty around them. People continue to act along the same norms and rules. The

alacrity during floods is not moving enough to prompt people to bend their social norms and structures.

#### **6.4- Community Resilience and Coping Strategies**

Community Resilience refers to the capacity and ability of a community to successfully adapt in the face of a stress, disturbance or disaster. According to Fran H. Norris et al, community resilience can be defined as “a process linking a set of networked adaptive capacities to a positive trajectory of functioning and adaptation in constituent populations after a disturbance” (Norris et al, 2007). Under this concept, community resilience is understood as the set of networked adaptive capacities which is theoretically speaking, a combination of resources and their dynamicity (redundancy, robustness and rapidity). This understanding of ‘community capacity’ is used in public health discipline in the implementation of a public health program or practice. The four key attributes that this concept presents are Economic Development, Social Capital, Information and Communication, and Community Competence. In this section, the experiences from the village and the community are examined employing the concept above to understand the community resilience and the various coping strategies.

##### **6.4.1- Economic Capital**

The economic status of most of the households in the village, as we have noted, is poor. The livelihood opportunities that people pursue are not very economical which is why they keep themselves engaged in many activities. For the households in the village, it is difficult to rely on the income of one member and from one source, be it agriculture or fishing. Most of the people in the village necessarily engage all the able members of the household into some work or the other. Sometimes the younger members in the family are sent off to cities so that they can get a stable work there. The trend is more rampant among the lower class and lower caste households. The upper class/caste households in the village do not have their members migrating in search of jobs because in their perception, the available jobs are not upto their level. For them, migrating for work that is lower than what they do in the village is not a good option. The Sahni and the schedule caste households have sent one or two of their members to the city for work.

To deal with the seasonal flooding, people have devised their own coping strategies. Most of them try to grow short term crops. These crops have a short maturity time period and are ready to be harvested before the seasonal floods.

The small self help groups in the village where people put in a small amount of money on a regular basis to earn themselves financial security are very popular. There are two types of Self Help Groups which are formed in the village. One, the groups that are formed by the individual members of the village without outside support on the basis of trust on each other for regular payment. Members of these groups are relatively economically stable as compared to other families in the village. Although there are many cases where people falter at regular payment, the groups continue to function. The amount that the members pool in for a month ranges between 500 rupees to 1500 rupees. There are a maximum of fifteen members in each group. Initially, many groups were started across caste groups but very few managed to sustain themselves. People used the money collected to buy cattle, repair assets (houses, vehicles, boats and tools etc), funding ceremonies and medical emergencies. People were reluctant to share information regarding the number of groups and the amount of money they contributed lest the person may guess the availability of money with them. The second type was that of SHGs that were run with the help of newly emerging microfinance schemes offered by private sector companies. These companies however functioned only in the nearby areas and villages which are relatively developed and well connected than Neerpur although they planned to expand to Neerpur as well in further future.

During the floods, people who are in agriculture watch out till the month of July. In conversation with the researcher, they said that they wait till July to apprehend the weather conditions and the level of floods. If the water level was in control till the end of July and they can get the field ready in August, they stayed back in the village. If they could prepare the field in the month of August, they continued with agriculture. If the floods seem to rise and water level was to increase, they would leave for another village or city in search of work. The land was then left under the care of the woman of the household. The agriculture is treated as the primary activity. The reliance on agriculture is dependent on the seasonal floods. If the floods were to continue for a long

period, the male members moved out of the village in search of economic opportunities. All these decisions were taken on the basis of their experiences and local knowledge about the weather conditions. There is no proper mechanism to inform them prior to the changing weather scenarios. Government information arrived only in the case of higher risk of flooding.

The continuous failure of agriculture has brought migration as a dominant trend in the village. Because of the seasonal floods, apart from the long distance migration, the local migration has also increased. Most of the male member both old and the young move out to nearby villages or the districts in search of work. This has changed the economic setup in the village. It has brought stability in the income of the household to a certain extent. The diversity of the options for securing livelihood by moving out of the village has undone their dependency and reliability solely on one source such as agriculture or fishing. This improves their resilience against the losses incurred during the floods. Further, since the men are not in the village, for the major period of time, women are left behind to manage the households. The researcher found that the women were more easily present and available in the village as compared to men. Women heading the households were empowered to take decision now which they otherwise would have relied on to the men for such as talking to the researcher and answering the questions posed to them. Clearly amidst the recurrent floods people have figured out ways to maintain economic stability for the households. Diversifying the sources of livelihood has strengthened their resilience against the recurrent floods.

Along with the traditional livelihood option of agriculture, fishing and livestock, people have opened themselves to new avenue. The fishing and livestock are important for most of the households in the village for their own subsistence. The fish are used for their consumption on a daily basis. They also use livestock for daily consumption of dairy products. Some of the families sell the surplus products for small amount of money.



## **6.4.2- Social Capital**

The major aspect of social capital is to look at the notions of social support in the village. Disaster sufferers tend to rely primarily on their indigenous support networks called 'social networks for coping and resilience post disaster'. Social networks are key social units that respond to disasters (Kreps, 1984). Social support imbibes within itself three major facets of social support: social embeddedness (quantity and types of relationships with others), received support (actual receipt of help), and perceived support (the belief that help would be available if needed) (Kaniasty & Norris, 2004). In the village, the social support and networks around the caste and gender lines which have various political and economic interactions that impact their nature.

### **6.4.2.1- Caste and Economic Network**

In Neerpur, the nature of social support is more caste based and the caste affiliation is an important predictor of social support and assistance post disaster. The caste acts as a major interest group and mobilizes support and assistance, post disaster. The members of the same caste are pre-eminently closer and exercise stronger network ties. The social cohesion is stronger within a caste group which often acts as a buffer during crisis for the people belonging to the caste community. During the normal period, different caste groups help each other for economic help. The economic networks are formed across caste groups. During the time of crisis, most of the people seek help from members of their own castes only. The affluent members of the dominant caste groups in the village, the Yadavs and Sahnis, also help the people of their own castes during the floods.

The Yadavs and Sahni control the major resource base of the village possessing major land holdings in the village. Being economically affluent, they employ other lower castes as manual labourers on their fields for the cultivation, thus providing livelihood to the landless and marginal farmers in the village. Notably the Yadav preferably lend their land to their own caste people in the village. Even if there are two options they will prefer their own caste. This network is very useful during normal as well as crisis, as the destitute bank upon them for their livelihood and survival. However, it is exclusionary in nature when it comes to caste.

#### **6.4.2.2- Political Network and social support**

As mentioned before, Yadavs and the Sahni are the numerically dominant castes in the village. They have hold over major village resources and have a major say in the local politics. The Yadav caste group is an important player in the politics of the state. They form the key vote bank for the dominant regional party, Samajwadi Party (SP) in Uttar Pradesh. The Sahnis because of their own political aspirations are mobilised into the opposition party of Bahujan Samaj Party (BSP) in the state. The political affiliation of both the castes can be identified in the village caste groups as well. Both groups try to grab the local leadership which is a major bone of contention between them. However, due to numerical majority, the Yadavs usually secure political reign in the village. This has led to the creation of two factions in the village. Both castes try to outdo each other in local elections.

Other caste groups such as the Chamars (SC), Dhobis (SC) and Nais (SC) shift their political affiliations, according to individual relationships with different leaders of caste groups. The Chamars and the Dhobis align more with the Sahni caste group. The Nais who usually align with Yadav caste group may change their affiliations depending on the relationship with the respective leaders. Since these caste groups are small in numbers, they tend to align with the group that is powerful at different moments. It is mostly the concerns at local level of politics that determine their political association. The political leaders of the different caste groups prioritise and secure the respective members of their caste to maintain their vote banks, especially the help and relief material during the floods. Hence, it could be easily deduced that local leadership, economy and caste affiliation are an important interface to social support.

#### **6.4.2.3 Gender and Social Support**

Women encounter strong institutional barriers to organizational efforts. Women are less likely to organize, either out of seclusion, lack of education, or outright threat. Bolin and Stanford (1999) suggested that women are particularly vulnerable to the effects of disaster because of their care giving roles and relative lack of power and status (Norris et al., 2005). However, in the village, women had stronger and more stable self help groups, where they would share different interests. Some of the groups were to enhance

financial security. Others were just for bonding, developing new interests and chatting. In conversation with the researcher, the women were more candid about supporting each other. They talked about requiring each other's support at several times such as everyday act of defecation which is an un-private affair in the village or to visit the doctor or to help pregnant women in the village. The common concerns of the women bonded them together and made them stand by each other in times of need. In the absence of the male member, women head their households. Different women members help each other out in pursuing household work such as buying grocery, visiting outside the village and taking care of the sick.

The village society follows strict social norms and values. All the people adhere to these social norms. The recurrent floods in the village have brought people closer to the concerns and problems of each other. The dominance of the male members in the village governs the relief and help rendered to the elderly, women and children. Often this is guided by patriarchal norms and values that accord a backward status to women and elderly. It is within this framework of patriarchy that support is made available to the elderly, women and children in the village. This support is patronising in nature and does not take into account the perspectives and opinions of women and elderly. It assumes that men know and decide what is best for all, especially for women and children.

The social support is an important aspect in the village that contributes to building community resilience against the floods. People are dependent on each other's support, physical and emotional to build resistance against the floods. The social support in the village is built around the caste and gender lines. The social capital in the village is both strengthened and weakened by the recurrent floods in the village. It is strengthened because of the degree of support provided by caste affiliation to individual members or household. It is weakened because it excludes other caste groups or prioritises their caste members over other caste groups. Similarly, while they acknowledge the need to take care of women, elderly and children which supports the latter in the time of crisis, at the same time, it denies them equal status in decision making and participation. While these groups exclude those who are not members, for the members these groups are an important source of inspiration and support during floods.

### 6.4.3- Information and Communication

The seasonal flood does away with a major part of the uncertainty about the disaster. However, for the frequent knowledge about the flood and the water level, the village watchmen<sup>7</sup> are kept at guard. They are to report to the people including the nearest households as well as the dominant people in the village such as the Gram Pradhan, concerned people and other affluent persons. They inform about the floods from the dam, the level of the water and the coverage of land. They are also supposed to signal to the whole village through the whistle in case of an emergency.

In the village, a benchmark has been set by the people to measure the intensity of the floods. If the level crosses a particular benchmark, people start leaving their respective places to their designated shelters. Through interpersonal communication most people are informed about the level of floods, and then people start packing their valuables (money, documents, jewellery), dried food items and clothes immediately. In the village, the official information is passed on to the people in the village by Gram Pradhan. The researcher found that most of the people knew that they shall be given relief and compensation for losses during the floods.

Indigenous knowledge is an important component that contributes to their resilience against the floods. Experience of years and knowledge that is gained from battling the seasonal floods has produced for the village community a rich source of information and skills. They employ these skills to build resilience and cope with the floods. One of the major concerns in the village, because of the floods, is to do with the nature of the house. While people cannot afford a concrete house, the mud house is too weak to stand the pressure of the floods. To resolve this issue, they use not the normal mud but the mud from the pond. The mud from the village pond is coarse and sticky. It pastes around strongly to bear the pressure of the floods. Unlike the normal mud that flows off

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<sup>7</sup> The watchman is appointed by a group of concerned people such as the Gram Pradhan, affluent and respected people in the village every year. A few young enthusiastic men volunteer to be the watchmen for keeping an eye at the flood levels. These young men perceive it as an opportunity to contribute to the village community and also make a mark for themselves in the eyes of the dominant people in the village. It is a non- remunerative voluntary work although they are quick to be recognised during the distribution of relief and compensation as compared to other households in the village.

with the floods, it sticks together. Because of the sticky nature, it has a drawback too. The house remains clammy because of the mud.

Further, during the floods, drinking water also emerges as a major issue. The sources of procuring drinking water in the village are the hand pump and the well. Both often get submerged during the floods, contaminating the water in well. To meet with this challenge, the handpumps are dug at a higher platform. The level at which the handpump is to rest is built at a higher surface from the ground so that it can be accessed during the floods and the water remains uncontaminated. Even the houses and other buildings are built at a higher surface from the ground. Grains are contained in metal containers and not in otherwise traditionally used sacks so as to prevent the grains from getting wet in the flood water.

These indigenous practices were a major source of knowledge and information for the people to build resilience against the floods. These practices were as old as the floods itself. This knowledge was passed from one generation to another verbally. The people in the village lacked any professional training to resist the floods or to mitigate their impact. Their sources of coping with the floods came from their age-old knowledge. This knowledge was crucial for building their resilience against the floods.

#### **6.4.4- Community Competence**

The community competence is an aspect of coping with the floods and building resilience against it. The community action through panchayat and Gram Sabha are important to strengthen the community and adapt measures to meet with the challenges posed by floods. The gram sabha in the village is the authority to implement the government policies on the ground. Although in the field, the researcher did not find that the gram sabha took extra measures to meet the conditions of the floods in the village. The Gram Pradhan was responsible in locating and calculating the loss incurred in the floods. He reports it back to the authorities about the loss incurred to respective households. The compensation money is distributed through the office of Gram Pradhan. There is a lot of corruption and mishandling of money in the distribution of relief money to the people. The Pradhan reports larger amounts of losses for the members of his own caste. They receive money more than others and on a prior basis.

People from other caste groups complained about the manipulation of data by the pradhan.

Gram sabha takes the responsibility of setting up relief camps of tarpoline tents. The sabha also provides for community cooking for first two or three days of floods in the village. Different households were allocated separate spaces at the shelter. Most of the people who procured relief at these shelters were the lower class households. The relatively better off households stay at other places close to the shelter. All these efforts by the gram sabha are crucial for the village to cope with the floods. These steps by the sabha ensure for the village, that they shall be provided with bare essentials during floods.

The community resilience and coping strategies in the village against the floods comes from a wide range of practices. The economic security and the diversity of options that a household maintains add to the resilience against the floods. Financial independence and security is an important aspect to mitigate the impact of a disaster. Further, the bonds and ties that people share and the help and support they receive from each other also contribute to building resilience. In the village, this need is fulfilled by various ties that people from across caste, class and gender networks. The indigenous knowledge of the community that has been tested against time further accentuates community resilience against the floods. These knowledge networks are shared by people amongst each other and across generations. The role of the gram sabha in securing the essentials for people during the floods is also important to strengthen community resilience. Lastly, it is important to note that floods are perceived as a common calamity faced by the households, in the village. Even though the impact of the floods varies across different households on the basis of caste, class and gender identities, there is a bond of shared suffering that can be seen among the people in the village. The inter-personal relationships among the people are governed with these concerns of mutual sharing of pain and determination to survive the floods each year.

The community resilience emerges an important aspect to understand the way people dealt with the floods. From social networks to economic independence and indigenous knowledge to the local government, the challenges posed back to the vulnerabilities

arising from the floods are multiple. People have put forth several barriers that mitigate the impact of the floods and also help in quick recovery. These actions and strategies are important to control the floods. All these components and the experiences from the field explicate the walls that communities build to challenge the floods and mitigate its impact.

### **6.5-The Stigma of Recurrent Floods**

Apart from the physical and emotional vulnerabilities that are explored in the field of disaster, another particular aspect that emerged in the field was the sense of stigma and shame among the people in the village. This stigma and shame was levied on the village and its residents because of the recurrent floods. The stigma that came to be attached to the people was not to a set of people or to group but to rather the entire village community as a whole. In a way, the sense of stigma and shame brought the people in the village together. The village had endured recurrent floods for years. The image of the village that is established in the state, other villages and cities is conjoined with the floods. The language, culture and food habits of the village are submerged under the dominant imagination of the village as that of a village facing recurrent floods.

In conversation with the researcher, people in the village talked about how it was difficult for them to find suitable match for their children to marry them. No family in the nearby village or city wants to marry their son or daughter to a family in Neerpur. The recurrent floods in the village have perpetuated poverty deeper than in other places. The hardships the households in the village have to go through are no secret in the nearby societies. If one were to marry off their daughter or son in the village, it was believed that they did not care much about their children's future as nobody would want to deliberately marry their children in the village. According to one of the men,

*“हमार बिटवा बिटियन के बिहावई के बरे हमने काफी दिक्कत होत हैं। काफी दूर जाई के बाद अच्छा रिश्ता नाही मिलत। सब बाढ के ईलाका जान के बचई चाहत हिन। कौन आपने बिटया बेटवन के कष्ट में देखई चाहत हैं। बियाह में रुपिया पैसा त भुलई जा कि मिली, एक रिश्ता खोजई में चप्पल घिस जात ह”।*

*To look for good prospects we have to go to faraway villages. Even then we can't find a decent prospect. Everybody refuses after learning about the floods. Who will send their son or daughter to a village with such sufferings? Forget about money, to find a prospect you have to tread a lot.*

Some of the people in the village get their children married through their relatives in other villages. The children are shown to the prospective family as belonging to the family of the relative. Then, when once they agree for marriage and some time is past, it is revealed that the bride or groom to be married is from a different family and village. It is common to find many women in the village who were married and brought to the village through deceiving. People talk about choicelessness as they cannot possibly have any other way to get a bride or groom for their children. The stigma attached to the village and the hardships faced in the village together made it difficult for the people to forge relationships with others.

Further, in the nearby villages also, the perception about the people belonging to Neerpur added to stigma. In common knowledge, it was popular to remark about the people of a certain area based on the characteristics of the surroundings. About Neerpur, recurrent flood was key characteristic. The researcher found that one of the officers when talking about the relief grant commented on the people in the village indicating that these people were prone to tell lies after all the floods. The people of the village were also stigmatized as unstable and reactive. The reason was placed in the floods. The floods made them shift from place to place and job to job. They were also always alert and quick to act. They were stigmatized as too much into picking fights also for they were reactive and aggressive by the people in other villages and regions.

All these notions and prejudices about the people of the village were common in use and behavior among the people in the nearby areas and government offices. The stigma attached to the image of the village and to the residents ran deep. The problem in finding a suitable match for marriage is only one of the few issues. They faced difficulties in a finding work in the nearby places as they were believed to be unreliable



and unstable at work. These stigmas had become an inevitable part of their profile even though undesired. These perceptions are so embedded in the socio-cultural imagery of the village and nearby areas as they are attached to the geographical markers of the village. The history of prevalence of these stigmas runs parallel to the history of the recurrent floods in the village.

In the village, disaster is a product of complex issues and situations. It also has umbrella connotation for many situations. In the case of recurrent floods, on the one side, it offers means of livelihood for one community (fishing and boating opportunities for Sahnis) and on the other hand, it builds the chaotic situation for the entire region. Floods assimilate the essence of village life that anyone can sense at every stage of their lives. The whole year directly – indirectly roams around floods. The recurrent floods in the village clearly have impacts at various levels of physical, social, financial and psychological, on the people in the village. These impacts are not homogeneous but vary according to the heterogeneous sociological realities of the village. The status and position of the groups and individuals in the village decided their vulnerability to the floods.

Usually everyone's condition is same in the village but when it comes to the question of equality, caste plays important role. It reflects in terms of resource holding, accessibility to the resources, priorities in policies, strong social and political networks. The lower caste people found themselves at the lowest rung in the caste ladder and at a numerically and politically inferior status in the village. Recurrent floods ruined their capabilities and increased their physical and economical vulnerability. The impact of the floods was much stronger and their struggles tougher. The geographical location of their houses, their access to the resources, their participation in the decision making and their political influence were all founded to be inferior status as compared to that of the members of dominant castes and class in the village. Their livelihood meant only to somehow manage two times meal. Most of the lower caste and class people engaged in daily wage work, which is irregular in nature. Their hold over resources in the village remains utterly constrained. The weak financial assets contribute to poor livelihood opportunities for the lower caste households in the village. The people belonging to the lower castes also have to manifest their inferior social status in their behaviour by not

over ruling the decisions of the upper castes. The latter do not perceive them as equal in intellect. Their wisdom and experience is overruled by the popular perception which is of the dominant class. They think them to be unworthy of respect and dignity. This bias is so deeply entrenched in the society that often the lower caste households do not protest this perception. They accept this subjection hesitatingly and work to sustain the hierarchies submissively.

Women are another group that suffer more in the recurrent disaster. High migration due to less opportunity in the village impacts the roles and responsibilities of women in public life. The increasing number of women headed households and absence of young male member indicates increasing burden of responsibility. Although their role and responsibility have increased in many ways but women are confined to the private sphere in the household and not allowed to access the public utilities and resources as freely as men. Traditional social norms and customs work to the detriment of women. The women also found themselves in a condition where their concerns and issue could never be placed firmly on the agenda. In the male dominated society of the village, women had to struggle more to take care of the household, the children, the elderly and then find a way to resolve their issues. They constantly face issues of sanitation and health, economic hardship and controlled accessibility of resources.

The elderly and the children saw the floods differently from the others. For the young ones, it kept them away from pursuing stable education. For young girls, especially, it brought them a time of threat to their safety and security although no cases of trafficking were reported. The elderly on the other hand valued other's lives more than their own. They put others on priority and tried to be as independent as possible. For them, their deteriorating health was a major concern especially during the floods.

The impact of recurrent floods on the social, political and cultural lives of the people had been far and wide. In such a scenario, the coping strategies and community resilience developed by the people in the village offered them ways to prepare against the recurrent floods. To meet the economic challenges that become dominant because of the disaster, people have strengthened the self- help groups where they can gain some amount of economic security. Most households of lower income group tend to send one

or two male members to work outside the village. Migration of the member in search of economic opportunity also helps the households in making ends meet. The caste solidarities also provide social and economic support within the members of the same caste group. The common concerns of women also brought them together to help each other to meet with challenges during the disaster. The people in the village employ their pool of indigenous knowledge and experiences of years into building barriers against the disaster.

The narratives and experiences draw before us an imagination of a natural disaster that once it launched itself was dependent on the social realities and structures of the human society. The recurrent floods, as we have seen, have far reaching potential and impact. The repeatability of the floods has put the village in a unique relation with it. The floods have existed in the village for several decades now. These have come to shape their lives, choices and perceptions. It also influences the perceptions of the others towards the people of the village. It stigmatizes them and creates a prejudice for the people to govern their behavior for the people. The floods have come to form an indivisible part of their lives.

If we compare and study village Neerpur's social support post disaster scenario with Kaniasty & Norris' (2004) [discussed in chapter two] Social Support model, we can easily identify that class, caste, gender and occupational groups are important pillars of the social embeddedness of the people in the village. Among all these groups', caste and gender based groups are stronger and more effective in social fabric. The model described that at the initial stage, sense of togetherness is strong in the event of a disaster. But as we have discussed, in the situation of recurrent floods people are saturated with yearly crises so they offer minimal support at every stage. They share mainly the common challenges and offer assistance during the crisis time within their interpersonal relationships. When it comes to Received Support, the imagination and aspirations of the people in the village are very low. People are not hopeful and positive about their future. Their experiences force them to believe in a dejected environment. Lack of political will and economical investment increased their reluctance. This unwillingness at every stage limits the received support among all groups. Primary support comes from their close kin. Under the perceived support, people rely on other

relatives who live in other village. They have minimal belief in the government as they think that the government cannot radically alter the situation. Although, in dire situation, they know that the relief in the form of shelter houses will be offered by the government only. In this scenario, the study village has close proximity as Kaniasty & Norris described in their social support model.

In the next chapter, we will look at the response of the state and the different agencies in the local, national and regional levels to the recurrent floods in the village and the recurrent disaster in general.

## **CHAPTER -7**

### **STATE RESPONSE: FRAMEWORK, PRACTICE AND EXPERIENCE**

The recurrent floods, so far we have noted, have seriously damaged the livelihood base of the households in the village. The impact of these damages is different among various households varying across caste, class and gender. Despite the coping strategies and community resilience offered by people in the village, the response of the state remains paramount in the management of the disaster. The state acts as the apex agency in the disaster management of the country. In this chapter, we critically analyse the framework and machinery adopted by the government to deal with recurrent floods in particular and disaster management in general. The chapter discusses the international framework which impacts the legislations and the plans enacted at home. It further narrates the experiences of the people affected from recurrent floods vis-à-vis the role played by the government agencies. Keeping in mind the specificity of the recurrent disaster, the chapter brings to light the experiences of the personnel involved in disaster management in the field. Through the prism of these experiences, the affected people and the government personnel, the chapter discusses the state response and limitations of the planning and policy.

The intervention of the state in dealing with the disaster has been known for a long time. The expanse of a disaster covers and goes beyond one individual to a large number of people which necessitates the actions of a higher authority. The individuals on their own often lack resources, support and strength to pull out of a disaster. The United Nations General Assembly declared the decade of 1990 as the 'International Decade for Natural Disaster Reduction' (IDNDR). Several countries had set up institutions for the management of disasters in their country. India also brought a permanent disaster management cell under the Ministry of Agriculture. A formal holistic plan was felt to be required after a series of disasters such as Latur earthquake in 1993, Malpa landslide in 1998, Orissa cyclone in 1999 and the major Bhuj earthquake in 2001. A high powered committee was set up under the chairmanship of J.

C Pant, the then secretary at Ministry of Agriculture for formulating a comprehensive and systematic plan for addressing the disasters in the country. In 2002, the disaster management division was shifted to the ministry of Home Affairs. With this a more robust hierarchical structure for disaster management in the country came into existence.

An institutionalised body National Disaster Management Authority (NDMA) devoted to the management of disasters in the country has not been very old and came out only in 2005. Prior to that there was no direct focus that was put forth for managing the situations created by various disasters in the country. The five year plans by the Planning Commission did not address the question of disaster expenditure specifically. The relief provided for mitigating the impact of natural disasters was obtained through various government schemes for employment, drinking water, agricultural inputs and flood control measures. The loans taken by the people for agriculture are often waived off under various schemes after the certification by administration. The loss incurred to assets of the government were mended and repaired by the specific departments. There was no overwhelming body of disaster management that took care of all these concerns. There was also a strong dependence on the flow of funds from local and international sources for relief and rehabilitation after a major calamity or disaster. In 2005, a body permanently for disaster management at the national level in the country was formed through the Disaster Management Act.

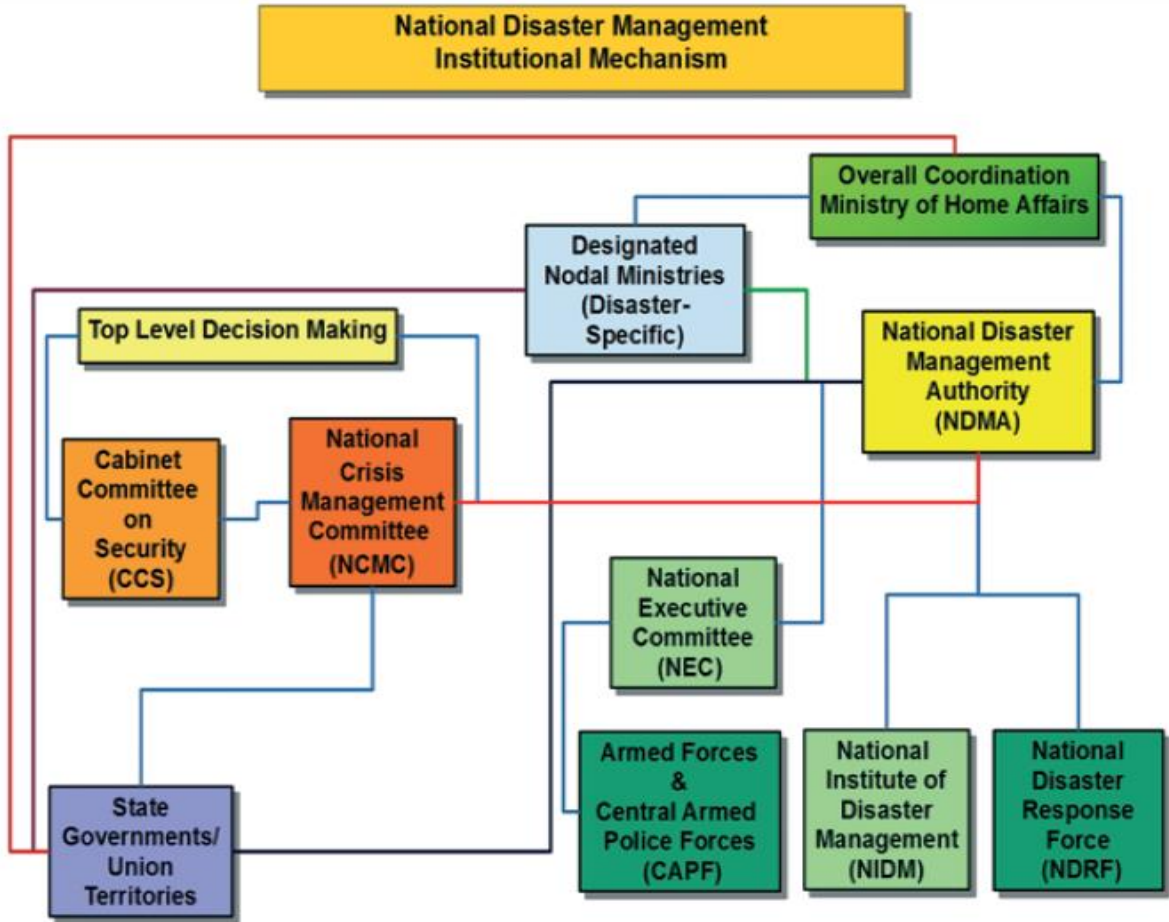
### **7.1- Institutional Mechanisms for dealing with Disaster**

The Disaster Management Act in 2005 provides for the effective management of disasters in the country. It establishes institutional mechanisms for drawing up and monitoring the implementation of the disaster management. The Act also ensures measures by the various wings of the Government for prevention and mitigation of disasters and prompts response to any disaster situation in the country. The Act provides for setting up of a three tier hierarchical structure, a) the National Disaster Management Authority (NDMA) under the Chairmanship of the Prime Minister, b) the State Disaster Management Authorities (SDMA) under the Chairmanship of the Chief Ministers, and c) the District Disaster Management Authorities (DDMAs) under the Chairmanship of

Collectors/District Magistrates/Deputy Commissioners. The Act further recommends for the constitution of different Executive Committees at national and state levels. Under its aegis, the National Institute of Disaster Management (NIDM) for capacity building and National Disaster Response Force (NDRF) for the purpose of responding to the disaster situation have been set up. It also mandates the concerned Ministries and Departments to draw up their own plans in accordance with the National Plan. The Act also had mandates for financial provisions for the creation of funds for response, mitigation and similar funds at the state and district levels for the purpose of disaster management. The Act also provides specific roles to local bodies in disaster management. With the enactment of the 73<sup>rd</sup> and 74<sup>th</sup> Amendments to the constitution and emergence of local self-government, both rural and urban, as important tiers of governance, the role of local authorities have become very important.

The National Disaster Management Authority (NDMA) was initially constituted on May 30, 2005 under the Chairmanship of Prime Minister vide an executive order. Following enactment of the Disaster Management Act, 2005, the NDMA was formally constituted in accordance with Section-3(1) of the Act on 27th September, 2006 with Prime Minister as its Chairperson and nine other members, and one such member to be designated as Vice-Chairperson. Its primary responsibility is the formulation of the policies on disaster management and guidelines for the disaster risk reduction. It also has to supervise the State Disaster Management Authorities (SDMA) in the prevention and mitigation of the disasters. Further, its task is to draw plans and policies for the management of disasters.

**Figure 7.1 - National Disaster Management Institutional Mechanism**



Source: National Disaster Management Plan, 2016:12

The Ministry of Home Affairs coordinates with the NDMA and other ministries who are to implement the plans related to disaster management. The planning and policy decisions are taken in consultation with the Cabinet Committee on Security (CCS) and National Crisis Management Committee. The 2005 Act also confirms the formation of National Executive Committee (NEC) that assists the NDMA for the preparation of National Disaster Management Plan. The NEC controls the armed forces and the NDMA controls the functioning of National Institute of Disaster Management (NIDM) and National Disaster Response Force (NDRF).

National Disaster Management Authority (NDMA) is the apex body of disaster management in the country. It formulates plans and policies for disaster management at



the national level. It also issues guidelines to the state authorities in drawing up the plans for state disaster management. NDMA is the federal body that supervises the plans prepared by various ministries and departments in the government according to the National Plan for the mitigation and prevention of disasters in the country. NDMA also formulates guidelines for various development plans and projects proposed by different departments and ministries so as to integrate the measures for the prevention of disasters. It also acts as the referral body for the legislative and executive branch of the government to coordinate the information and implementation of the various policies and plans for disaster management in the country. NDMA is also responsible for regulating the funds for both mitigation and disaster relief in the country. NDMA also works for the prevention and mitigation of the disasters and encourage preparedness and capacity building for dealing with the disaster situation in the country. NDMA, in the case of emergency outside the country, runs into action to support other affected countries from sudden disasters.

For the management of disaster situation at the state and district levels, the Disaster Management Act provides for the constitution of State Disaster Management Authority (SDMA) and District Disaster Management Authority (DDMA) in all the states and union territory across the country. The SDMA works for the prevention and mitigation of the disasters at the state level. The primary function of the SDMA is to adopt and implement the policies and guidelines given by the NDMA for the disaster risk reduction in the state. Under section 20 of the Act the State Executives headed by the chief secretary of the state government with four other secretaries of the departments as the government may deem fit is formed. The committee is to monitor and coordinate the implementation of the National Policy, National Plan and State plan as provided under section 22 of the Act.

The District Disaster Management Authority (DDMA) is the chief executive body of the NDMA working at the ground level. The head of DDMA is the District Magistrate as a chairperson and elected representative of the local government authority is appointed as the co-chairperson of DDMA. In the tribal areas, the chief executive member of the district council of autonomous district is appointed as co-chairperson. In

those districts where Zila Parishad exists, its chairperson shall be the co-chairperson of the DDMA. The members of DDMA include the Superintendent of Police, Chief Medical Officer of the district and two district level officers designated by the state government. The district authority plans, coordinates and implements the guidelines of disaster management. It also has the authority to examine any construction in the district to enforce the safety standard. The DDMA arranges for the relief measures and provisions in the post disaster situation at the district level.

The three tier hierarchical structure works for the prevention, mitigation and control of disaster at the national, state and district levels. This framework for disaster management is on the lines of the International Strategy for Disaster Reduction (ISDR), the Rio Declaration, the Millennium Development Goals (MDG) and the Hyogo Framework 2005-2015. The Disaster Management Act is a landmark Act in the legislative history of the country. For the first time, the Tenth Five Year Plan mentioned a lengthy and detailed chapter on disaster management. The Twelfth Financial Commission Report provided a review of the financial arrangements to be made for disaster management at various levels in the country. Prior to the 2005 Act, the topic of disaster management was not present in any of the three subject lists in the Seventh schedule of the constitution. The state governments were provided with financial assistance under the calamity fund to be utilised as per the guidelines issued by the Finance Ministry. The individual ministries were empowered to act on the respective incidents of disasters. This fragmented the approach to disaster management in India. With the passing of the Disaster Management Act in 2005, it became evident that the government of India was considering the issue of disaster management in the country seriously. Table no 7.1 depicts the categorisation of various disaster and the associated nodal ministry.

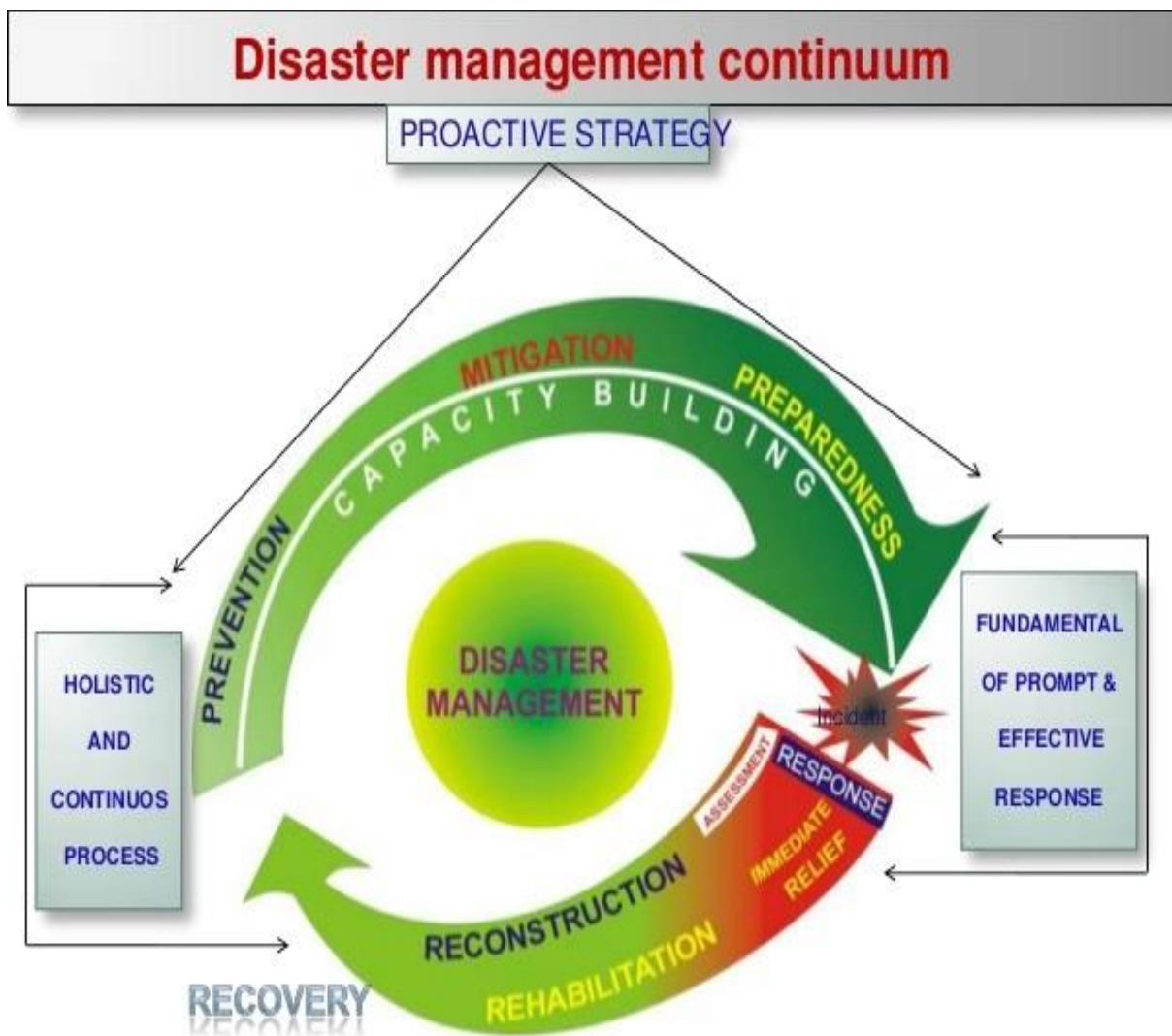
**Table – 7.1 Disaster specific responsible Nodal Ministries**

<b>S. N.</b>	<b>Disaster</b>	<b>Nodal Ministry</b>
<b>1</b>	<b>Biological</b>	Min. of Health and Family Welfare (MoHFW)
<b>2</b>	<b>Chemical and Industrial</b>	Min. of Environment, Forest and Climate Change (MoEFCC)
<b>3</b>	<b>Civil Aviation Accidents</b>	Min. of Civil Aviation (MoCA)
<b>4</b>	<b>Cyclone/Tornado</b>	Min. of Earth Sciences (MoES)
<b>5</b>	<b>Tsunami</b>	Min. of Earth Sciences (MoES)
<b>6</b>	<b>Drought/Hailstorm/Cold Wave and Frost/Pest Attack</b>	Min. of Agriculture and Farmers Welfare (MoAFW)
<b>7</b>	<b>Earthquake</b>	Min. of Earth Sciences (MoES)
<b>8</b>	<b>Flood</b>	Min. of Water Resources (MoWR)
<b>9</b>	<b>Forest Fire</b>	Min. of Environment, Forests, and Climate Change (MoEFCC)
<b>10</b>	<b>Landslides</b>	Min. of Mines (MoM)
<b>11</b>	<b>Avalanche</b>	Min. of Defence (MoD)
<b>12</b>	<b>Nuclear and Radiological Emergencies</b>	Dept. of Atomic Energy (DAE)
<b>13</b>	<b>Rail Accidents</b>	Min. of Railways (MoR)
<b>14</b>	<b>Road Accidents</b>	Min. of Road Transport and Highways (MoRTH)
<b>15</b>	<b>Urban Floods</b>	Min. of Urban Development (MoUD)

Source: National Disaster Management Plan, 2016:15

The importance of Disaster Management Act also lies in the fact that it shifts from a response and relief centric approach to a cyclical approach of disaster management. In a response centric approach, the focus is on dealing with a disaster after it has struck through means of providing relief and compensation. In the cyclical approach, the disaster management is inclusive of the actions broader than the relief such as prevention and mitigation, preparedness, recovery and rehabilitation. It also aims at training and capability improvement of the forces and the local community. Figure 7.2 depicts the cyclic approach in disaster management.

**Figure 7.2 - Disaster Management Continuum**



Source: National Policy on Disaster Management 2009:7

## **7.2- The Response of the State to Floods**

Floods are a recurrent disaster that strikes the various states in the country every year. Floods are a major destructive force in the country. A significant energy of disaster management is expended on dealing with floods in the country. After the unprecedented floods of 1954, the Government of India (GoI) took several initiatives to solve the problem of floods in the country. The *Rashtriya Barh Ayog* (RBA or National Flood Commission), was set in the year 1976 by the Government of India (GoI) to cover the flood management in India. The Commission submitted its report in the year 1980 which contained 207 recommendations. The report formed the basis for formulating flood management programs in the country. The National Commission for Integrated Water Resources Development Plan (NCIWRDP) also published its report in 1999 after studying the issue of the massive floods in the country. The Nation Water Policy 2002 proposed several recommendations for the control and management of floods in the country including the preparation of basin wide master plans in flood prone areas, watershed management and catchment area treatment plans and measures like flood forecasting and flood plain zoning for damage minimization. The NCIWRDP in its report suggested that the emphasis should be on the management of flood plains, flood forecasting, flood preparedness and flood insurance (Jain et al., 2007:887).

Uttar Pradesh is one of the states that face recurrent floods every year. It is home to major Indian rivers such as Ganga, Yamuna, Ghagghra and their tributaries making the state agriculturally viable. Every year floods in the rivers cause immense loss of life and property in the state. Floods are especially common during the monsoon season in the state. The state has the largest population density because of which the loss is comparatively higher than the other states. The excess rainfall causes the upsurge in the level of river water flowing out of their banks and causing floods. The other major reason of floods in the state is the discharge of water from Nepal to the major rivers of eastern and the central Uttar Pradesh. Despite the massive havoc created by floods every year, there is a lack of adequate and strong measures to deal with the floods. The responsibility for the prevention and mitigation of floods is with the ministry of water and irrigation. For the irrigation department, the management of floods is a technical and mechanical process. They perform their routine task during every monsoon.

The District Disaster Management Authority is also responsible for dealing with the flood situation at the village and district level. Its primary target is preparedness, response, prevention and mitigation at the local level. The DDMA has divided flood preparedness in three stages for the effective preparation and mitigation. The plan is envisaged in three phases: before the onset of the floods or the preventive measures, during the floods or the active season and post disaster (flood) recovery and reconstruction. All the rescue and relief efforts are envisaged at two levels: the upper level and the lower level. The NDMA and the SDMA which are the legislative bodies are considered as the upper level, while the functions of the DDMA, the executive body of the NDMA and the SDMA fall in the lower level (Yadav, 2012).

### **7.2.1- The preparation and planning before the rainy season: First phase**

The DDMA prepares a blueprint for the flood management during the monsoon season with the help of the Indian Meteorological Department based on the previous experiences. The plan consists of the preparatory stage. The authority with support of other departments provides necessary arrangements to be made for the upcoming disasters. The master plan has several considerations on which it is based such as prior disaster exposure, weather condition, availability of information and vulnerability of the area and population.

#### **7.2.1.1- At the Upper level**

The first phase in disaster management is the period when preparedness and mitigation plans are made and implemented in anticipation. Under the mitigation plan, the focus is on building long term barriers for floods to eliminate or reduce the risk. The irrigation department keeps a track of the flood situation, on a daily basis. It divides the whole region in zones and establishes a control room in each zone. In the year 2015, the state was divided into 16 zones and 45 control rooms, to observe the situation. These centers are functional for four months from June 1 to October 31 every year. The responsibility for the management of these control room is with the nodal officer.

- Wireless centers are established for the purpose of quicker information and communication from different places. The responsibility of establishing and

controlling these wireless centers is with the department of police. In 2015, 115 wireless centers were put in place across the state. One of the centers was setup in Siddarthanagar district too.

- Telephonic link is directed between the various departments of the governments temporarily for quick dissemination of information.
- The central control room to monitor all the centers is at the Irrigation Department in Lucknow.
- The department sets the rain gauge instrument at different centers in every district to measure and locate the rainfall pattern and the fluctuation in the level of the river water. A report is prepared on an everyday basis.
- The everyday fluctuations in the water level are measured to a keep a track on hazard situation in the area.
- The department puts forth a management plan for the district and oversees its implementation.
- The department also undertakes clearing of the drains, the repairing of the sewage pipes, local drainage system and the local dams.
- Special efforts are made to reach out to the difficult and vulnerable areas and people living there. The arrangements are made for the delivery of relief provisions such as shelter camps, boat, health care services, and so on to the affected population.
- The departments also reviews and modifies the plan according to the needs.

#### **7.2.1.2- At the lower level**

While the upper level, the authorities are consigned to formulate plans and make arrangements for preparedness, the lower bodies run into action for implementation of these plans and policies. There are several functions that the authorities at the lower level perform for proper management of floods in the district:

- All districts have a steering committee that is assigned with the duties of local planning and basic decision making. The head of this committee is the District magistrate and the secretary of the committee is the executive engineer of the

Irrigation department. The other members of this committee are the Superintendent of Police, District Agriculture Officer, District Supply Officer, Executive and Senior Executive Engineer of Electrical Department and Water Corporation.

- The major role of the committee is to act as the link between the higher authorities and the lower level officers. The committee ensures the collection of necessary information and work plan (relief center, communication plan etc.).
- It also ensures the presence of adequate number of personnel and staff for the implementation of the programmes.
- A committee is formed at the village level known as “*Bhad Suraksha Samiti*” meaning Flood Protection Committee. The function of the committee is to utilize the local resources and participation of local people in the management of floods. The Junior Engineer at the Irrigation department is the head of this committee. The other members of this committee are the *Sarpanch* of the village, the opposition leader, village secretary, heads from the women and youth committees of the village, members from the non- governmental organizations in the village, Lekhpal and other village volunteers.
- The committee plunges into action much before the actual floods. It is active in the mitigation and prevention efforts too in the village. It monitors and keeps a check on the condition of the dam during the floods and other key indicators which may risk the condition of village.
- The local administration and the committee identify the vulnerable areas and populations in the village. They make necessary arrangements such as providing shelter, medical aid and drinking water and cooking aid.
- The local administration also coordinates with other departments and centers for help and support during the floods.

### **7.2.2- Role and functions during the flood season: Second Phase**

The second phase of the flood management is the emergency phase when the disaster actually occurs. It is in this phase, the preparation and mitigation plans are tested. It is



the most crucial phase in disaster management. This phase marks out the mobilization of all the emergency services and personnel.

#### **7.2.2.1- At the Upper Level**

- During the floods, everyday vigilance on the dam and the level of the river water becomes very important. Any single miss may lead to unanticipated results. The major function of the disaster management authority at the state and district levels is to keep vigilance and make preparations accordingly. The authority is very prompt at this stage. The review of the plan is conducted on an everyday basis testing it against the field.
- A mandatory connection is established between the various departments in the district for updated information about the situation in the village. The coordination between the departments becomes necessary for the successful dissemination of the effective rescue and relief operations.

#### **7.2.2.2- At the Lower Level**

- The authorities at the ground level gear up for the actual operation on the basis of the blue print they have been working so far.
- The *Bhad Suraksha Samiti* and some other experts keep a close vigil at the situation of the village and the key indicators of the level of the river water and the flow of water in the dams. Any change in the key indicators is immediately reported to the higher authorities so that they can take necessary steps according to the situation.
- The local disaster management authority establishes several shelter houses in the village for the residents which are known as *Bhad Shardhalay* or *shivir*. These camps are the shelter houses where the residents are rescued and placed during the floods. After the flood water flows into the houses of the people, they flock to these relief camps. These relief camps are well accommodated with necessary commodities and equipments provided by the government.
- The arrangements are also made for the evacuation of the residents from their respective places. Several boats are run through the water logged areas.

According to the directives given by NDMA, three different boats (big, medium and small) should be employed for the rescue operation and for the communication purposes as well. In Neerpur, 70 small, 20 medium and 30 large boats were available for the rescue operations.

- The local disaster management authority makes available basic products such as rice, wheat, flour, candle, salt, kerosene oil, tarpaulin, lighting and other basic materials for the residents at the shelter camps. In this period, several non government organizations also plunge into action along with the government agencies. Some of the residents who cannot manage to come to the relief center and are stuck in the flooded areas are procured the basic commodities through the boat services.
- The health department is also activated during the floods. Along with the district management authority, the inhabitants at the shelter camps are ensured health care facility. Temporary medical posts are put up at the relief centers during the floods. Mobile ambulances are also made available for delivering medical services. Often help is sought from other Primary Health Centers also. Personnel are hired from other districts in case of emergencies. The target is on providing health care services to the maximum number of people with minimal loss of lives and resources.
- Adequate measures and supplies are ensured in the case of outbreak of any epidemic.
- The local authority ensures that people are evacuated from dingy and falling buildings as well. Dilapidated buildings increase the risk to the people residing in them.
- The local authority along with the police also keeps a vigilance on the outbreak of criminal activities, feuds and theft in the village.
- In the case when situation goes out of control, the paramilitary forces are informed. Immediately help is sought from the forces to manage the situation in the village.
- The local authority also encourages the people of the village to participate in the relief operation along with the government personnel.

- The authority also prepares a report of all the necessary steps, action and points of caution for the future reference.

### **7.2.3- Recovery and rehabilitation in the post- floods period: Third Phase**

The last phase of disaster management is the post disaster recovery period where the works of rehabilitation takes place. The purpose of the recovery phase is to restore the disaster affected area to its previous state. It is an important stage of disaster management where the local people and the situation in the village are restored to normalcy.

#### **7.2.3.1- At the Upper Level**

- After the floods, the local administration undertakes a preliminary enquiry into the affected areas. A survey is conducted based on which a report is prepared for mapping the losses incurred in the floods. This report is prepared with the help of the Gram Pradhan in the village and members from local administration.
- The report is evaluated to calculate the total physical and economic worth of the damages incurred during floods.
- On the basis of the report, funds are disbursed by the government for the disaster recovery and resettlement.
- The administration also alerts the medical department and prepares for the risk of any upcoming epidemic which may emerge after the floods.

#### **7.2.3.2- At the Lower Level**

- The grants are released for the recovery of losses and mitigation of the impact of floods.
- The losses are estimated at the departmental level as well so as to recover and update the supplies and equipments for the next year.
- The administration ensures relief and welfare packages to the affected community so as to advance the reconstruction and resettlement process in the post floods situation.

The management of floods in the state was followed on the lines of these three phases. These three phases of functioning have been defined under the Disaster Management Act, 2005. In 2015, the United Nations brought out the Sendai Framework which has significantly altered the definition, priorities and strategies of the disaster management. India is a signatory to the framework and has worked out a National Disaster Management Plan in 2016 on the lines of the Sendai Framework. The following section discusses the significant aspects of the Sendai Framework and the Indian plan formulated on its basis.

### **7.3- The Sendai Framework (2015) and the National Disaster Management Plan (2016)**

From 14 to 18 March 2015, United Nations International Strategy for Disaster Reduction (UNISDR) organized the “Third World Conference on Disaster Risk Reduction” (WCDRR) in Sendai, Miyagi, Japan. The representatives of 187 countries across the world intensely discussed and debated for 30 hours the future strategy for controlling the disaster occurrences and came up with the ‘Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030’. The United Nations General Assembly endorsed the framework in June 2015. The Sendai framework is the successor to the Hyogo framework for action (HFA) 2005- 2015: ‘Building resilience of Nations and communities to disaster’ which for the first time had set in detail the definition, description and explanation of the work that is required to reduce the disaster losses. The new framework is now widely hailed as an important step towards the defining and setting of the new climate agenda for the countries across the world. It shall play a major role in the preparation of strategies, policies and programs for disaster prevention and resilience.

If we look at the duration of the Hyogo framework, (2005-2015) it is found that disasters have continued to exact a heavy toll, and as a result the well- being of the person, communities and countries on a whole have been affected (UNWCDRR 2015). Over 700 thousand people lost their lives, as a result of disaster, over 1.4 million were injured and approximately 23 million were made homeless. Overall more than 1.5 billion people were affected by disasters in various ways (ibid). The 2015 Sendai

framework addresses the gaps and limitations of the Hyogo framework by placing greater emphasis on risk reduction, recognising and encompassing the diversity of concerns of people, giving regard to the indigenous and local knowledge and addressing the issues at the management level.

The Sendai framework is being welcomed in this context and aims to reduce the vulnerability of the people and communities across the world. This is an overarching holistic framework to deal with the disaster related issues like death, destruction, displacement and rehabilitation. Sendai framework also acknowledges the urgent and critical need to anticipate, plan and reduce disaster risk in order to more effectively protect persons, communities, their livelihoods, health, cultural heritage, socioeconomic assets and ecosystems, and strengthen their resilience. The signatories of the agreement range up to 187 countries including India and other developing nations. India is a major game changer in analyzing the success and failure of any framework. For the massive population and geographical diaspora of the country makes it vulnerable to a large number of natural and non- natural disasters exacting a heavy toll of lives and property. India has also welcomed this framework and endorsed it for its own planning and policy making purposes.

### **7.3.1- The targets, goal and priorities of the Framework**

Sendai framework recognises that the reduction of exposure and vulnerability, prevention of new disaster risks and accountability for disaster risk reduction are felt at all levels. There are several factors that contribute to risk enhancement in disaster, which the framework takes cognizance of, such as poverty and inequality, climate change and variability, unplanned and rapid urbanization, poor land management, limited availability of technology, declining ecosystems, pandemics and epidemics. The framework proposes the strengthening of ‘good governance’ in disaster risk reduction at all levels of policy implementation. It emphasises on the need to improve preparedness and coordination at international level for disaster response, rehabilitation and reconstruction. It highlights the idea of ‘Build Back Better’, an idea that emerged in the backdrop of Indian Ocean Tsunami, for the post- disaster recovery stage aiming to recover the practices and safer communities.

The Sendai framework talks about the need for a broader people centric approach which involves the engagement of various stakeholders such as women, children and youth, persons with disabilities, poor people, migrants, indigenous people and old persons, with the government in the designing and the implementation of the plan. It also directs at a collaboration of public and private sector and other civil society organisations to work closely in the integration of disaster risk reduction in their practices. It also aims to enhance the international cooperation between developed and developing countries for sharing information, technology and management practices. Sendai framework covers in its ambit the risk of small- scale and large- scale, frequent and infrequent, sudden and slow- onset disasters caused by natural and man- made hazards (Sendai Framework, 2016).

Sendai framework draws its course of action through goal, target and Priorities. According to it the future goal which should be pursued is

*‘Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience’.*

To support the assessment of global progress in achieving the outcome and goal of this framework, seven global targets have been agreed. These targets will be measured at the global level and will be complemented by work to develop appropriate indicators. National targets and indicators will contribute to the achievement of the outcome and goal of this framework. The seven global targets are:

- (a) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015.
- (b) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015.

- (c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.
- (d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- (e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.
- (f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030.
- (g) Substantially increase availability of and access to multi-hazard early warning system and disaster risk information and assessments to people by 2030.

For achieving these goals and targets, the committee came up with priorities and these priorities have been developed from experience gained through implementation of the ‘Hyogo Framework for Action’. The priorities that the framework aims to achieve are:

**Understanding disaster risk:** SFDRR proposes to capture information and knowledge for pre-disaster risk assessment to prevent and mitigate the impact of a disaster on a wide scale.

**Strengthening disaster risk governance to manage disaster risk:** The Sendai Framework emphasises on strengthening governance and institutions for a full circle of disaster risk mitigation which includes prevention, preparedness, response, recovery, and rehabilitation.

**Investing in disaster risk reduction for resilience:** The framework lays great importance on public and private investments in mechanisms, to build a disaster safe and resilient society.

**Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction:** SFDRR takes cognizance of the

importance of the recreating a safer world during and after a disaster to build a safer and disaster resilient community and society.

The Sendai framework is an important framework to be implemented for reduced disaster risk by the signatory countries. In May 2016, the Government of India and National Disaster Management Authority released the National Disaster Management Plan (NDMP) on the lines of the Sendai Framework. The National Disaster Management Plan (NDMP) boasts of incorporating all the recommendations authorized by the Sendai Framework. It provides a framework and direction to the government agencies for all phases of disaster management cycle. Government claims that it is a dynamic document in the sense that it will be periodically improved keeping up with the emerging global best practices and knowledge base in disaster management. It recognizes the need to minimize, if not eliminate, any ambiguity in the responsibility framework. It is designed in such a way that it can be implemented as needed on a flexible and scalable manner in all phases of disaster management: a) mitigation (prevention and risk reduction), b) preparedness, c) response and d) recovery (immediate restoration to build-back better). It is consistent with the approaches promoted globally by the United Nations, in particular the Sendai Framework for Disaster Risk Reduction 2015-2030. The NDMP incorporates substantively the approach enunciated in the Sendai Framework and will help the country to meet the goals set in the framework and environmental assets of persons, businesses, communities, and countries.

The documents states its vision for 2030 as *“Make India disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods, and assets – economic, physical, social, cultural, and environmental – by maximizing the ability to cope with disasters at all levels of administration as well as among communities.”* In conformity with the aims of the Sendai framework, the NDMP endorses the following four themes:



### **7.3.1.1- Reducing Risk; Enhancing Resilience 7.3.1.2**

After DM act (2005), in 2009, National Policy of Disaster Management suggested risk evaluation to protect disaster vulnerable society and hazardous situation. It emphasizes on indigenous knowledge to prevent disastrous conditions. Policy also suggested mitigation projects run at state level in disaster prone areas. NDMP takes one step ahead under the guidelines of Sendai and formulates disaster risk plan. In this plan the effectiveness of disaster risk reduction will depend on coordination mechanisms within and across sectors and with relevant stakeholders, at all levels. For each hazard, the approach used in this national plan incorporates the four priorities enunciated in the Sendai Framework into the planning for Disaster Risk Reduction (DRR) under the five thematic areas for action – a) Understanding Risk, b) Inter-Agency Coordination, c) Investing in DRR – Structural Measures d) Investing in DRR – Non-Structural Measures e) Capacity Development.

These five points are important because they define and identify various stakeholders, agencies to play their roles in different stages. They cover all structural (physical infrastructure and facilities) and non- structural initiatives (laws, norms, rules, guidelines and techno- legal regime) for disaster risk reduction. With these, NDMP formulates hazard-wise responsibility matrices for disaster risk mitigation. NDMP categorically defines the roles and responsibilities of the centre and state governments at every theme. It aims at collecting information through adequate systems, providing warnings and carrying out meaningful monitoring of hazards. It aspires at conducting training programs, mock drills, awareness programs and curriculum development for building capacity at various levels of governance.

### **7.3.1.2-Preparedness and Response**

Preparedness and response is the only phase of disaster where people can actually see the government body acting in the field of disaster. NDMP gives special attention on the preparedness and response process. It is an important phase of disaster management because it is the litmus test of disaster planning of all levels. In this phase the primary goal of response is saving lives, protecting property, environment, and meeting basic needs of human and other living beings after the disaster. In that sense the immediate

measures and relevant authority become leading words for this section. For the immediate measures any system needs proper preparedness plan and to execute that preparedness plan system needs appropriate and relevant authority. In this segment NDMP defines the major themes and allocates roles and responsibility to each agency.

NDMP follows the Incident Response System (IRS) guidelines to be enacted for disaster preparedness and response work. National early warning system, fire and emergency services (FES) and disaster response force like National disaster Response force (NDRF) and State disaster response forces (SDRF) have significant role to quick and effective response after disaster outbreak. NDMP gives significant space to centre-state co-ordination during response and preparedness. The central government supplements their efforts through logistic and financial support during severe disasters as requested by the state governments. Responding to such emergencies stretches the resources of district and State administration to the utmost and they may require and seek the assistance of Central Ministries/ Departments and agencies like the NDRF, Armed Forces, CAPF, and Specialized Ministries/ Agencies.

For preparedness and response, NDMP extensively builds guidelines in 18 themes and directs centre and state government for operating on them. The Plan identifies the lead agencies and supportive agencies at central and state levels for different actions. The major tasks of response given in the responsibility matrix are: 1. Early Warning, Maps, Satellite inputs, Information Dissemination, 2. Evacuation of People and Animals, 3. Search and Rescue of People and Animals, 4. Medical care, 5. Drinking Water / Dewatering Pumps / Sanitation Facilities / Public Health, 6. Food & Essential Supplies, 7. Communication, 8. Housing and Temporary Shelters, 9. Power, 10. Fuel, 11. Transportation, 12. Relief Logistics and Supply Chain Management, 13. Disposal of animal carcasses, 14. Fodder for livestock\ in scarcity-hit areas, 15. Rehabilitation and Ensuring Safety of Livestock and other Animals, Veterinary Care, 16. Data Collection and Management, 17. Relief Employment and 18. Media Relations.

### **7.3.1.3-Strengthening Disaster Risk Governance**

Governance is one of the important sectors on which the success of the entire disaster risk reduction plan is dependent. Sendai offers great attention on governance related

issues and mentions that strengthening disaster risk governance is necessary, to foster collaboration and partnerships for the implementation of disaster risk reduction and sustainable development. Sendai specially focused on time bound implementation, development of relevant laws, technical financial and administrative disaster risk management, sectoral laws (land use, urban planning, building codes, environment, resource management, and health and safety laws); formulate relevant public policies and laws aimed at addressing issues of prevention or relocation, where possible, of human settlements in disaster risk-prone zones.

NDMP has taken these considerations and proposed generalized responsibility matrix for strengthening disaster risk governance and specific agencies at the centre and state with their respective roles. NDMP developed six thematic areas in which central and state governments have to take actions to strengthen disaster risk reduction.

Under the DRR Institutional Strengthening, NDMP promotes transparency and accountability so that work culture of disaster risk reduction, institutional efficiency and responsive mechanism can also be established at ground level. It also promotes the coherence and development of relevant laws, regulations, and public policies. Capacity development theme talks about guidance, technical support, oversight and monitoring at different departments and agencies. NDMP also emphasises on community participation, active civil society organizations for capacity building. NDMP recognizes the role of private sector and educational institutions for capacity building. NDMP focuses on promoting participatory approaches in disaster management based on a multi-hazard approach. It aims to empower local authorities and encourage local participation at the household level. The role of political leadership and their sensitivity is defined under work with elected representatives section. National and local level leadership participation is ensured through discussions on disaster management at different levels. Ensuring the functioning of a sound grievance redress mechanism in all the ministries/ agencies involved in disaster response and formulation of laws, regulations, enforcement mechanisms, techno-legal regimes and institutional arrangements for monitoring compliance are covered under the sections of grievance redress mechanism and promoting quality standards.

#### **7.3.1.4-Recovery and Building Back Better**

The Sendai Framework expects that after a disaster, the stakeholders will be prepared for Build Back Better (BBB). Nowadays global community see post disaster construction (recovery, rehabilitation and reconstruction phase) as an opportunity for building back better. Restoration, rehabilitation and reconstruction are important components for BBB. In the worst case scenarios District Disaster Management Authority is overwhelmed and the only primary acting agency at the ground. In such scenarios, central and state governments provide the external assistance.

NDMP has divided BBB in three components- recovery, reconstruction and rehabilitation. It borrows approaches for recovery and reconstruction, from NPDM (National Policy on Disaster Management), 2009. NPDM approach cites that choice of technology involved in reconstruction should be feasible for the socio- cultural or economic environment for the community and it should be participatory in manner. It should involve all sectors like the affected community, government, NGO and other private sectors.

The process of recovery is not set by any orderly action. It is purely based on the existing situation and the crises of the community in the field. NDMP covers all steps of the recovery process in six major themes and defines key processes involved in the recovery process. It categorizes recovery theme under post-disaster needs assessment and credible damage assessment, developing a vision for BBB, ensuring coherence of BBB with the development programs and goals, incorporating resilience and BBB, balancing recovery across sectors and prioritizing sectors for recovery are the major themes. These recovery themes cover early, mid and long term recovery plans.

Long term recovery efforts must focus and lead to redeveloping and restoring the normal life in the disaster areas. It is highly required and desired phase after disaster recovery process. The reconstruction phase requires a substantial commitment of time and resources by the governments (State and Central) and other agencies. Classical way of emergency management is not efficient for such reconstruction process. It needs special efforts to reconstruct in the post disaster scenario. These reconstruction efforts include reconstruction of public infrastructures and social services damaged by the

disaster, which can be completed over the long-term, re-establishment of adequate housing to replace that has been destroyed, restoration of jobs/ livelihood that was lost and restoration of the economic base of the disaster areas. NDMP emphasises on co-ordination between different levels of government and the other stakeholder institutions with their specific responsibilities.

NDMP classifies rehabilitation process into four categories- physical, social, economic and psychological. The physical rehabilitation process shall include rehabilitation of houses, buildings, railways, communication networks, agricultural strategies, artisanal work and provisions for relocation. The social rehabilitation focuses on revival of educational activities for the children and other provisions for elderly and women. The focus of economic rehabilitation is on restoring livelihood opportunities and continuation of trade and commerce in the affected region. The psychological rehabilitation mentions provisions of counselling for stress management and trauma care.

The National Disaster Management Plan, 2016 expands the ambit of prevention and mitigation of disasters for greater risk reduction. It emphasises on the cooperation among different agencies of government, community of affected people and other non-governmental organisations for dealing with disasters. The plan also asserts the importance of governance in disaster risk reduction through efficient and quick sharing of information, adequate mobilisation of funds and improved coordination and sharing of responsibility among various agencies. A special focus in the Sendai framework and the NDMP has been paid on the recovery phase (Build Back Better) through rehabilitation, reconstruction and restoration. It is an important aspect in the post-disaster scenario. Last but not the least, the framework and the plan underscore the significance of capacity building of the personnel involved in implementation of the plans, rescue and relief teams and the community of people grappling with the disaster. All these aspects and several others combine to elevate the plan to a document of paramount importance in disaster risk reduction. The implications and consequences of the plan in the field are yet to be seen and analysed. However, existing situations in the disaster affected regions have important insights to be contributed to the plan. They provide the details and nuances to the definitions and concepts in the plan. The

limitations in the existing strategies that the field brings out are important to be considered in the new planning and policy making. The next sections attempts to look at the concerns that the narrations from the field affected by recurrent floods highlight which can be crucial to be estimated in the 2016 plan.

#### **7.4- Concerns on Disaster Management**

The support and management system provided by the disaster management authority is very crucial for the well being of the people in the village. The community resilience and coping strategies in the village are helpful to a limit. Beyond that limitation, people are not on their own capable of dealing with the repeated floods. Further, disaster puts an additional burden on them to take care apart from the usual struggles of everyday life. The lives of the people affected by recurrent floods are at a disadvantage. The period of the floods in the village spans for long two months or more. Prior to that, the threat of the flood remains. After the flood, the recovery takes a long time. The agriculture is halted for a long period of time. The houses have to be repaired. The sick livestock are to be taken care of too after the floods. The school and other community buildings are to be restored for their original purpose. To ensure smooth functioning of lives and livelihood in the village and to reduce the impact of the calamity, the intervention of the state becomes pivotal. In conversation with the people in the village and the government officers involved in disaster management, several concerns came out in the forefront. These concerns can be seen in the light of the major themes of the new plan discussed above. These four themes are- coordination between government and the people, governance, rehabilitation and capacity building. Further, these themes have a variety of issues that were brought out from the experiences in the field.

##### **7.4.1- Coordination and Cooperation**

Under this theme, three major issues are discussed. These are the availability of information and awareness of the village community, participation of women and lower castes in decision making and communication.

The basic feature of ensuring coordination between the government and the village community is the information sharing. That the people must be aware of the department

of the government functioning for the management of disaster is of utmost importance. The Act of 2005 was a decade and one year old when this research was conducted. When the researcher asked people about the District Disaster Management Authority, people seemed oblivious to its presence. One of the men, Balwan Yadav, said,

*“हमन के का पता डीडीएम का होत हैं, बाढ आवत है तो टेन्ट में रहल जाइ जा। केवल लेखपाल औउर परधान घूम घूम क इहा लिखा पढी करत रहत हैं”*

*I do not know what is DDMA. When the flood comes, we go to the tent. I have seen lekhpal and the pradhan taking rounds and taking notes.*

Another person, Madan Sahni, talked about DDMA with vague knowledge about it. He said,

*“बाढ आई तो गांव में बहुत लोग आवे। बाढ आवइ से पहले एक जीप में दुई लोग दिन में आई के चक्कर काट के चल गए। टेंट में भी एकाद बाद देखें रहिल जा। सरकार उनके भेज गांव वालन के खयाल रखन के लि भेंजे। इहे लोग बाढ के बाद पैसा भी देवेय। सरकारी आदमी परधान लोगो के साथ ही बातचीत करें”।*

*During the floods, several people come in the village. Two people used to come in jeep before floods and take a round. In the tent also, some people could be seen. The government has sent these people to take care of the villagers during floods. These people give money after the floods. The government people interact with the Gram Pradhan only.*

Clearly, people did not have any knowledge about the DDMA and its role in the disaster management in the village. Most of the people in the village vaguely talked about government personnel who were around during and before the floods. They could not specify anything about the authority. They looked clueless when the researcher talked

about the authority. Although they were aware of the responsibilities of the government in protecting the people during the floods, specific knowledge of the departments and government bodies was unavailable to the people.

The second aspect that is crucial in ensuring cooperation and coordination between different stakeholders is through ensuring equal participation of marginalised sections- women and lower castes. Chapter six has mentioned about the lack of participation of women in the decision making. Despite the presence of a woman as Gram pradhan, the decision making involved the husband and other male leaders in the village. Most of the women hesitated from speaking about their concerns and demands to the authorities in government or in Gram sabha. Even when they came out to speak to the researcher, they had standard mechanical answers. It was apparent that they were not used to the experience of talking about themselves as a voice of their own. Clearly, no steps had been taken so far by the government authorities to reach to the women. A similar situation was seen with regard to the participation of the lower castes. Although they took part in the decision making, their voices were mostly submerged or overpowered by the stand of the leaders from dominant castes. The local structures in the village did not permit the marginalised sections of lower castes and women to come forward. The government authorities on the other hand did not walk the extra mile to undo the status quo to ensure cooperation from all groups. In most cases, the chat with leader of the dominant caste or the Gram Pradhan was perceived to be enough. The researcher observed that a lot of potential participation from the people in the village was untapped because of the lack of platforms for the people to communicate and share. There was no consistent channel for the people to express their concerns.

The third aspect that needs to be brought out in this theme is that of communication. The researcher observed that the nature of the information that was passed onto the Pradhan with regard to the everyday indicators of floods was often too technical. The daily forecast was shared in terms of the amount of rainfall in the area. It did not immediately convey to the people its meaning in the real sense i.e. whether they should move out or not, whether they should start packing their belongings or not and other related questions. People mostly relied on their own experiences with the weather conditions to take these decisions.



#### 7.4.2- Governance

Ensuring adequate financial arrangements to deal with the disaster is one of the key components of the plan. After the floods, compensation is the only way people can correct their losses and recover back to a period of normalcy. However, most of the people in the village complained about the inadequacies and discrepancies in procuring the funds for the repair work and losses. To begin with, people talked about the corruption involved as they had to bribe the Pradhan for getting their name in the list for funds. One of them, Giri Sahni, mentioned,

“पड़सा पावड़ खातिर परधान के घर ना जाने कितना चक्कर काटई पड़ जात हैं। उहो के बाद बिना 50 रूपया लिहें बिना परधान माने ना। पड़सा देई पड़बे करै अगर लिस्ट में आपन नाम चाहो तो। लिस्ट में जेकर ना उही के पैसा मिलें। इ सब हर साल होवत हैं”।

*For getting money, one has to visit Pradhan so many times. Even after that without paying fifty rupees, he does not agree. After paying only you get your name in the list of those who get the money. This continues every year.*

People also complained about the delay in the funds that they received for compensation. Another man, Bhisani Yadav, said,

“पैसा आवइहें में बहुत देर होई लग जात है। बाढ खत्म बाद सब ठीक करई में टाइम लग जात हैं। खेत सूखई में मकान सही करे में और बाकी चीजों में महिनन लग जात हैं। पर मदद वाला पैसा एक दू महिना में आवत हैं। ओकरे बाद भी जब पैसा आवत हैं ऊ बहुत कम होत हैं कि ओमें सब काम होई जाएं। जितना के नुकसान होत हैं उतना पैसा कभी नहीं मिला। हर बार थोडा ही मिलत हैं”।

*It takes a lot of time for money to arrive. After the floods, it takes so much of time to get things sorted. The field dries and the house is repaired, it takes one month. The money*

*comes after more than a month. Even then, the money is too less to accommodate everything. It is always less than the amount of loss incurred. Every time it is very less money.*

The amount of compensation is too inadequate, for people to continue with a decent living. This pushes them further deep into debts. The estimation of amount of loss is left to the Pradhan who is the political head of the village. He prioritises men from his own caste and kin to be benefitted from the compensation after the floods. The more vulnerable households are often the least benefitted from the compensation money after the floods.

Another important aspect of this theme has to do with the efficient management of the disaster. The District Disaster Management Authority is the key agency that ensures smooth and efficient management of the disaster in the field. Some of the ground level officers like lekhpal and ANM are the bridge between government and people. They become important in every phase of disaster management. From rescue to relief, data to identification, and survey to census, they have an important stake to manage at the ground level. The researcher observed their work pattern and also talked to them to know about their perception of the area and people in the village community. Government officers diplomatically replied to most of the questions. When researcher posed the same questions in informal conversations then some of the government officers admitted their limitations and expressed concerns. One of the officers who is working as revenue officer in the village told the researcher,

*First of all the region is not so geographically good for development, whatever investments have been done by the development authority, are washed out due to flood. Although government tries to take all the necessary action which are important for the region but they are never sufficient. Government is doing their best practices in the field. You know here everything is*

*in god's hands, if he permits then you can live otherwise you can't. People are so poor, this is their fate. Nobody can help them. Even we are not efficient to prevent floods. Government has their own limitation too. We are lacking with personnel and other resources. For example we need more than 400 hundred village revenue officers (lekhpal) in one tehsil but we have not more than 120. With these numbers, how can you expect efficiency? It is very difficult to manage all the government routine and other necessary works, but we have to manage. Sometimes one revenue officer is managing more than four to five revenue villages. Just calculate how difficult it is for us to manage floods”?*

Further, the accusations of corruption were not to be hurled only by the village community. The government personnel complained of the general dishonesty and mendacity of the people. The researcher observed that there was a strong degree of mutual distrust between the government officials and the people in the village. One of the officers said,

*“Everyone is enjoying the situation. Nobody wants to evacuate the fields. People are exploiting the government plans and policy. You know for them flood is somewhere beneficiary. They ‘become’ double or triple households during the floods just because of remuneration and relief money. Officers angrily said that sometimes I personally feel that, I am working for them, who are selling and earning from their problems. They are greedy not needy people. They don't want to move from*

*the place. In every government program they are doing fraud with the scheme. For example in MGNREGA, with the help of the Gram Pradhan they just sell their number of days without doing any work. Part of money they offer to pradhan as bribe. In this way without work they are taking money”.*

Later one of the informants who held the senior post in revenue department had much angst against the people and the politicians. He blamed politicians for their politics and other responsible persons who were not doing what was important for their community. He also raised questions on the accountability and responsibility of the people. He lamented that now- a- days, the morality of the people has gone down. According to him, people were not morally high. He also showed his anger on the system which is built by the nexus of corrupt people. On a very high pitch, he said,

*“Nobody wants the solution. Leaders, people, civil bodies and other agencies are playing their own games. Political leaders are just playing their politics. As you know, the region is more vulnerable for the hazard situation we need to make strong arrangements at every level. But what do we do? We have casual attitude towards their problems. Political leaders put pressure on us to issue tenders to someone they want. We know the contractor will not do good work in the field but we can't refuse them because these leaders have much influence. Sometime these leaders and contractors also come from their caste. But no one is honest, contractors build bad infrastructure and politicians approve them. Some of the government officers are also not good.”*

The situation that emerges is that of a nexus in which the government officials, the people in the village and the local politicians are found to be complicit. The recurrent flood in the village has contributed to the hardening of this informal nexus. The complexity of the situation makes it difficult to locate the victims and the oppressors in the black and white format. Rather, it is only by placing the situation in the field of recurrent floods that these different shades make sense.

#### **7.4.3- Rehabilitation**

Rehabilitation, during and post disaster, is one of the foremost concerns, in disaster management. Procuring adequate shelter spaces for people during the floods was the main activity of the government officials in the village. It is one of the prime responsibilities of disaster management. Most of the people knew about the shelter camps that were set up during the floods and confirmed their stay in the same. The shelter camps were set up in the school building and on the higher land near the dam. The shelter camps are put for a period of one week. The time can be extended according to the severity of the floods. Due to the inconveniences at the shelter camps, people resort back to their houses or on the roofs even before one week. One of the men, Madhi Sahani, told the researcher,

“शुरूआत में जब बाढ़ ज्यादा रही त हमन टेन्ट में सब लोग आई के रहल जाईजा। हमन लोग एक गांव एक परिवार की तरह वही रहेल जाय। पर बहुत कठिनाई होवे करैय। सब लोग रहिल जा तो भीड़ तो होवे करी। बच्चा बूठा एक दू दिन तो शांत रहे पर ओकेरे बाद त झगडबड़ ना करिहे बाबू। इहां बहुत आफत होई जात हैं पर कौनउ और जगहां तो नहई बा। अगर इहां ना रहिल जाई तो कहा जाई”?

*In the tent everybody stays in the beginning when the floods are more. I took my family and stayed there too. But it is very difficult. All the people who stay there make it very crowded. The kids and the elderly remain calm for one or two days but after that they start fighting with each*

*other. It is a lot of mess but there is no other option. If we don't stay in the camp, where will we go?*

The women in the village found it most difficult to stay in the camps. They talked about how in the four or five days, they would lose their patience to stay in the camps. They also mentioned about the lack of proper facilities in the camp. Some of those concerns were with the women with very young children.

*“शिविर में रहेल बरे बहुत ज्यादा मुश्किल झेलई पड़त हैं। छोट छोट बचवन त भीड़ देख बहुत डर जावे और चीखे और चिल्लावे हैं। हमन तो उनही सब में लगा रहिल जा। हमन लोगन के जोनउ मिले उ सब खाई लेइल जा लेकिन छोट छोट बचवन के लिए खाना बहुत मुश्किल से होई जा है। आदमी लोगन तो दो मिनट ना लगावें चिठन खातिर लेकिन हमन के त लडिकन के ख्याल रखबई के पड़ेय। खेतन में जाईल जा तबतक बचवन के पकडइ में तो उ लोग गुस्सा से भर जाएण। एक तो खेत जाई बरे दूर जाइ के पडत हैं और से अकेलें ना जाई सकत हों। हमन त प्रार्थना करत रहिल जा कि कब पानी उतरई त हमन पचें अपने घर लौट सकी”।*

*There is a lot of difficulty we face in the camp. The infant babies get scared of so many people in the camp and scream a lot. We spend most of our time handling them. We eat whatever we get but for little kids and babies it is very difficult. The men don't take two minutes to lose their patience on us for the babies. We go to defecate and they can't handle the baby for even few minutes. We have to go so far to defecate and that too you can't go alone. We keep waiting when the floods will be over and we can go back to our homes.*

Clearly, the women and men both face difficulties at the relief camps. Women, especially, were more specific about the kinds of difficulties they faced. The special needs for kids were ignored in these shelter camps adding extra burden on women.

Further, the condition of the shelter made the children uncomfortable. They also complained about the inadequate provisions for toilet facility and sanitation related problems.

A second major component that people talked about in the management of the flood situation had to do with the handling of the livestock. There were no arrangements for maintaining the cattle folk of the people. Most of the people let loose their cattle in the floods so that they can swim and manage on their own. They could not be carried to the relief camps for human beings and there was no shelter for people's livestock.

“हमन लोग तो शिविर से चल जाई लेकिन मूक बेजुबान जानवरन बेचारन कहा जइहैं। हम ओनके खोल त देई लेकिन भैंस त तैर लेत हिन लेकिन कई बार बाढ़ में बहुत दूर निकल जात हिन। तो इसन में जब तक पानी थमें न तब तक दूढई में बहुते दिक्कत रहे। उप्पर से चारा के अलग दिक्कत। कई बार त बीमार होई जात हिन, मरऊ जात हैं”।

*We all go to the camp but the animals can't speak, where will they go? We open them as the buffalo can swim. They sometimes go too far in the floods. By the time flood settles down, they are too difficult to locate. There is no fodder for them in floods. A lot of times they fall sick and die.*

Another man, Shivram Singh, told the researcher,

“हमन का घर बार इह भइसन और बकरी के सहारे चलेय बा। बाढ़ में इहन सब का बहुते नाश होवत हैं। हमन शिविर में ना जाइजा महिला लोगोन के बच्चा समेत भेज देइल जा। का करी जा इहेन पशुअन के अकेला छोड़ के कहा जाइल जा। अगर इहें ना रहिए त हमन का खाब और कहां जाइब? रोज हमन एहन के अपने बच्चवन के जैसे पालत पोसिल जा। बाढ़ आवे त अपना जान बचावई खातिर इन्नकर जान थोड़े छोड़ देहिल जा”।

*My household runs because of these goats and buffalo. They are destroyed in the floods. I do not go to the relief*

*camp, I just send my wife with kids. What to do, where do I go leaving them alone? If they don't stay, what will we eat, where will we go? I treat them like my own kids. When the floods come, should I leave them to die here and save my own life?*

The authorities also mentioned about how some of the villagers do not resort to the relief camps and it becomes very difficult to convince them. They accepted that they do not have provisions for protecting cattle but they said they do not have adequate funds and mechanisms for the same. It became one of the often repeated concerns of the people in the village.

A third crucial aspect was that of the medical services during disaster. Despite mentioning it on paper that there shall be a medical camp next to the relief camps, the villagers talked about the absence of any such facility. The medical facility at the village was non-existent even during the floods. The small provision made for the villagers was a sham of kind for it was too inadequate for the large population and too less equipped to deal with different kind of casualties. The pregnant women, the infant babies and the elderly suffer the most during floods. There are no provisions for them to procure immediate medical help in the village. One of the men, Balram Yadav, said,

*“हमारे दो महिने के बच्चे को बाढ़ में दस्त और बुखार पकड़ लिहेस। दो दिन तक तो देशी इलाज किये पर उसका हालत हाथ में नहीं आएस। हार के हमन ओका नाँव से शहर लेई जाइ पड़ा। वहां दोई दिन दिखावा तब जाई के आराम आई। डॉक्टर कहे की इलाज में देर नहीं किया करो तो बच्चा भी कमजोर ना होएँ”।*

*My two months old baby got loose motion and fever during floods. For two days, we tried homemade remedies, but he only got worse. Finally I took him to the city hospital through the boat. He was admitted for two days and then was recovered. Doctor told me that if treatment had started earlier, the kid would have been healthier.*



The people got various kinds of diseases in the floods. Some of them required basic provisions, others required proper medication. Both these services were unavailable during the floods from the arrangements made by the district disaster management authority. We have in the previous chapter seen the example of the complexities in the pregnancy of one of the women at the village during floods. One of the women, Bina Devi, said,

“हमारे अम्मा के बाढ़ के दौरान काफी तेज बुखार आई रहा। ओन का काफी हालत खराब रही। ओं सारी रात सोई ना पावत रहिन। इहा कौनो डॉक्टर त रहतेन नाहीं। बुढियां के नावों से लई जाई में काफी दिक्कत रहे। हमन तो भगवान से ईहे मनावत जात रहे कि कुछ दिन और थामें रहई जब तक पानी ना उतर जाई। पर कौनों तरहा शहर डॉक्टरन के पास लई गए। ऊहां डॉक्टर बढियां दवाई देहने। अम्मा एक महिना सेवा कराईन और ठीक होई गइन। ऐसेन में त हमनी के सोचल जा की कौन बीमार ना होई ईहां”।

*My mother had got a high fever during the floods, her condition was really bad. She could not sleep the whole night. Here there was no doctor. It was difficult to take the poor old woman through the boat. I kept praying that she should survive the floods. My prayers were answered. I took her to the doctor in the city and she recovered. The doctor treated well and after one month of care, she got alright. Now I only pray that nobody should get ill during floods.*

There were several incidents which people talked about where they had no option but to make a move to the city. The lack of medical services at the relief shelters during the floods was a major lacuna that troubled a lot of people. The more vulnerable people suffered more because services in the city meant expending much more money. It is clear that there are several important concerns that are left unaddressed in the rehabilitation phase.

#### **7.4.4- Capacity Building**

The fourth theme of capacity building forms an important aspect of the disaster management. It directs at training the field officers and the people in the village for dealing with the disaster. However, the situation in the village is very different. An important aspect that emerged in the field was that of the perception of the government officers with regard to the nature of the work and posting. According to one of them, officers think that they have got posting here as a punishment posting. In this way, everyone is just passing their tenure and wants to shift somewhere else as early as possible. The unwillingness on the part of the officers towards the work is a major hurdle in imparting training and building capacity of the officials.

The officials in the village also mentioned about the half-heartedness with which the higher authorities dealt with the disaster. One of them stated that the higher authorities did not take disaster management as serious concern which is why they never try to build specialized office for the disaster management. Even they are not trained themselves to handle disaster as such, they never got any experience and training for this. The ground level officers in the village expressed their concerns for a permanent functioning body of disaster management at the village or district level. Officers with specialized portfolios must be given the responsibilities of the management of the disasters and their effects on the village throughout the year unlike the system that wakes up only a few days prior to floods.

Another aspect that becomes crucial in the theme of capacity building is that of the inadequacy of volunteership. The field of capacity building depends on the volunteership, i.e. people volunteering to be trained for dealing with the disaster situation. The idea of volunteership rules out remuneration or other lucrative offers that might attract the people to the option to volunteer. In the field of recurrent floods, while the capacity building and training can be a very strong strategy, the lack of remunerative benefits for the same acts as a hurdle. The concerns of consistent livelihood and poverty prevent people from pursuing capacity building programs willingly.

## **7.5- Analysing the state response**

The state is immensely invested in the field of disaster management in the country. The amount of planning and policy execution expended in disaster management by the state agencies is enormous. Disaster management and risk reduction has emerged as one of the dominant concerns in the country and the world. It is important to critically understand the way the response of the state has been evolved in the situation of recurrent disaster. The dimensions that such an analysis opens up for planning and policy making have ramifications across disaster situations and contexts. The following three heads analyse the response of the state in the situation recurrent floods in lieu of the political and social conditions in the area. It attempts to link this diagnosis of the state response with the factors and concerns that can be kept in mind for the implementation of the 2016 plan.

### **7.5.1- The inadequacy of Political will**

In the overall image of the field that is highlighted in the work, it clearly emerges that there is a lack of political will when it comes to dealing with regions affected by recurrent floods. A strong political will is required both for dealing with the recurrent floods in specific and for the implementation of regular plans for development. However, the certainty and regularity of floods in the village has cemented an image which keeps radical actions, policy and programs at bay. The implementation of regular plans and programs of the government for poverty alleviation, employment generation and other social security schemes are disturbed in the village. This is because of the overarching situation of recurrent floods that maintain a situation of perpetual poverty and underdevelopment in the village. This acts as a repellent for the selection of this village in major government schemes and programs. The political will is hesitant of investing in areas that are inclined towards producing skewed numbers. The lack of political will is a major hurdle in the development of the village. Until the situation of the floods in the village is not dealt with strongly, the political will towards investing in the village shall remain reluctant. This is a major difficulty for the implementation of the plans.

Further the lack of will because of the consistency of disaster in the village, reflected in the functioning of the civil society in the village. The people in the village have also adopted a defeatist attitude where they do not choose to fight for their demands of greater responsibility for the state. Rather, they resume or limit themselves at maintaining a certain status quo in the village. The concerns like delay in the delivery of compensation, minimal corruption, inadequate supplies at the shelter camps and ignorance towards the livelihood are not taken up with strong enthusiasm and resistance. There is an acceptance on the behalf of the people towards the recurrent floods and lack of political will as fate. They do not believe that much change can be brought in their existing situation. This is because of the reason that the consistency in the floods goes parallel with the consistency in the absence of political will to alter the situation in the village. Even during the heightened moments of elections where electrifying speeches from aspiring candidates dole out gifts and promises to the expectant voters for their votes in favour, the village does not see floods as a factor.

#### **7.5.2- Under-estimating the role of the District**

From the very formulation of the plan to the implementation mode, there is a certain way in which the district has been under-estimated in its role as a body that may contribute in policy making as well as in particulars of execution. The guidelines are issued by the central authority with modifications from the state authority. The specificity of the situations at the district and the village are often ignored in this one-way procedure. In the context of the recurrent disaster, this is especially prominent. In the case of the sudden disasters, it is common to see that the district authorities are put in touch with the national authorities or state level leadership. Sometimes, the central level may jump directly into providing leadership and authority at the district level for dealing with the disaster. But in the case of the recurrent disaster, such a situation is rare. The social, political and economic particularities in the region affected by the recurrent floods do not find specific mention in the plans because of the under estimated role of the district in the policy making.

This has ramifications on the functioning of the district authorities. As discussed in the case of the recurrent floods, the nexus that is formed in such situations often work to the

convenience of the local authorities. The social and political structures in the area affected by recurrent floods are cemented. Even if the plans talk about making special provisions for women, children and the elderly, it is most likely that the local authorities do not substantiate it and continue with their links with the upper caste male members in the village. The caste and gender relations are not touched by the district authorities whose only concern is to maintain a minimum state of order. The district authority functions to catch up to maintain the status quo in the village. The role of the district authority in the stronger implementation of the plan including the provisions that may disrupt the social structures of discrimination is under-estimated. The role and responsibility of the district authority has to be strengthened and ensured in the entire process of disaster management- from formulation of plans to their execution.

### **7.5.3- Inadequate attention to Livelihood generation**

It has been argued in the previous two chapters that the recurrent disasters have a crippling impact on the state of livelihood in the village. In the disaster management, planning and execution, the ignorance towards the issue of livelihood generation is astonishingly high. In the field affected by recurrent disaster, the situation is further aggravated. **The condition of livelihood can be mapped in such areas through collecting data over a period of time about the changes in land use pattern, employment pattern, migration, productivity in agriculture and state of microfinance.** However, the situation of data collection on issue of livelihood is abysmal. The understanding of livelihood in the plan and in terms of data remains vague. The role of data collection with regard to livelihood is often merged with relief distribution. The amount of the attention that is required for dealing with the issue of livelihood is severely lacking in disaster management.

Further, one can see that there is certain escapism from keeping targets visible from the disaster management authorities. The Sendai framework comes out boldly with targets in numbers that are to be achieved in the period of next fifteen years. But the national plans shuns away from endorsing those (or modified) targets for itself. The targets are important to keep the authorities at all levels accountable. In the lack of targets, it is difficult to substantially locate the consequences and achievements. It emerges that the

disaster has space and context specific impacts. It is crucial for the disaster management to map those particularities (social, political and economic) that hamper the chances of a substantial proportion of people from coming out of underdevelopment and poverty. The scope of the disaster management has to be enlarged with substance that tackles the conditions which have rendered a community into accepting disaster as their fate. With better planning and policy making, significance must be attached to the process of implementation as well.

The next chapter concludes the discussion and also provides recommendations on the basis of the lived experiences and challenges from the empirical findings.

**CHAPTER -8**  
**DISASTER RISK REDUCTION AND THE WAY FORWARD: DISCUSSION**  
**AND RECOMMENDATIONS**

Floods have not just devastated the lives of the people in the village of Neerpur, but have also normalized the disaster in their routine around its occurrence. It is a recurrent disaster that repeats itself every year because of the seasonal changes in the river level. There are several regions/states in the country that face recurrent floods and Uttar Pradesh is one of them. Further, the village Neerpur, is especially important because of its unique geographical and topographical location. The stories of the devastating floods in the region can be traced back to a long period. For generations people have faced recurrent floods in the village. The seasonal floods in the village disrupt the normal functioning in the village every year. Yet the extended and prolonged consequences of the floods have contributed to the creation of an alternative routine. The people in the village have become used to this routine in which dealing with floods is the prime motive. All the major decisions in the lives of the people in Neerpur such as livelihoods, interpersonal relations, social recognition and social economic hierarchies revolve around the concern of the recurrent floods. Their day to day routine is also impacted by the issue of recurrent floods. The availability of work on everyday basis for both men and women, the education of children and the health care for weaker members in the household are some of the everyday concerns that directly or indirectly connect to the situation of recurrent floods.

The scenario that emerges in the case of recurrent floods is very different from that which is found in the case of sudden disaster. Year after year, recurrent disaster becomes so much a part of the daily routine that it easily gets invisibilized. The attention and the shock that are common to sudden disasters can be seen missing in the case of recurrent disaster. The absence of the concern over recurrent disaster in the form of conceptualization in literature, policy discussion and media has normalized the recurrent floods in the state of Uttar Pradesh. The destruction caused by the recurrent floods goes beyond the spectacle of devastation, as it happens in sudden disaster, to the everyday restructuring of life and livelihood of the affected people. Among the people

associated with the affected region, the inhabitants and the government officials, the sense of normalcy looms large over the issue of recurrent floods. The poverty, illiteracy, lack of infrastructure and unemployment in the village is directly linked to the recurrent floods. Yet it fails to gather the kind of attention that sudden disasters gain. This work has attempted to bring out the uniqueness of the recurrent floods as it emerges in the village named Neerpur in the Siddhartha Nagar district of Eastern Uttar Pradesh. It argues that the certainty around the recurrent floods in the village has implications that make it an important study for disaster risk reduction and livelihood studies.

### **8.1- Summary of the Main Findings**

Using the main keywords like disaster, vulnerability, floods, livelihoods, social support, gender and disaster management, the review of the literature was conducted from the national and international journals and books. The research began with the broad objective of understanding the impact of the recurrent floods and the response of the state in disaster prevention, mitigation and response. In order to analyse disaster from the social science and public health perspectives, it pursues an analytical- qualitative research design. The work employs the ethnographic method with the support of tools like household survey, interview, discussion, observation, group discussion and interview schedule to research the answers. The findings were discussed under three main chapters using different categories and sub-headings.

Livelihood is one of the prime concerns in the disaster studies. The impact of recurrent disaster on the livelihood of the people is the focus of this thesis. Away from the understanding that treats livelihood primarily as the economic gain and loss incurred by a household, this research attempts to look at a broader notion of livelihood which covers in its ambit not just the economic avenues of the people, but also their skills, capabilities and tangible assets as potential sources of strengthening livelihood. This holistic notion of livelihood is especially appropriate in the context of recurrent disaster. The certainty of the impact of recurrent floods in the village makes the tangible (physical and financial) and non-tangible (social, human) assets necessary for the people.



The domination of agriculture as the major livelihood option for the people puts them in direct contact with the recurrent floods. The households practicing agriculture are severely impacted because of the recurrent floods. The agriculture dependent economy that revolves around the monsoon and water pattern is hugely impacted from the floods in the region. The households practicing agriculture have to struggle against the long term water inundation in the land especially those who have their land in the lower area. The time taken by the land to be back to a state of normalcy often delays the cultivation of crop. The entire crop cycle is shattered to the detriment of the economy. The people who are dependent on the agriculture for the source of their livelihood are affected badly. The disturbance in the agricultural pattern because of the floods leads to low productivity. In such a situation, even subsistence of the household on agriculture becomes difficult, profit is a distant dream. The inundation of water for long time has given rise to the occupations like boating and fishing in the region although in small number. The households that pursue boating and fishing during the state of inundated water after the floods depend on daily wage labour outside the village.

In the flood situation, the whole environment comes to a standstill. The local shops are to be shut for several days altogether as the recovery from the floods takes time after the water level has reduced. The transport system is interrupted which stops the supply of goods and products in the village. The local entrepreneurs face heavy losses during and after the floods. As the sources of livelihood in the village decline, the only option that emerges before people is to migrate out to work. Migration among the people was common in the village. From young boys to men, families were disintegrated as they moved to cities in search of job opportunities. The women headed households in the village were to then depend on rearing livestock for the livelihood. The livestock especially suffers from recurrent floods as there is hardly any safe mechanism to take care of them during floods. The animals also catch diseases during floods which last for and take long time to cure. The loss of animals is frequent and common phenomenon after the floods in the village due to increased vulnerability and exposure towards diseases. These deaths are not compensated by the government especially in the case when an animal has died months after the floods are over. The situation of livelihood in the village is particularly grim because of the recurrent floods.

The condition of the livelihood situation emerges even darker if one considers the assets base of the households. Under the Sustainable Livelihood Model, it is urged to strengthen the asset base to attack the poverty among the households. However, in this work, it can be seen clearly that if the vulnerability context is of the recurrent floods a cycle of poverty becomes prominent. The situation of the five assets in the village is miserable. The natural, physical, human, social and financial assets are in a worse condition incapable of offering any buffer against the floods. It is because of recurrent floods and the continued struggle against them every year that prevent the village economy to develop its sources of livelihood. The natural assets of land and livestock are severely underdeveloped as they are naturally and directly vulnerable to floods in the village. In the village, the social assets remain damaged. The social assets of networks, groups and connections are hindered for any kind of development because of the repeatability of the floods.

The groups in the village are formed around caste lines as the disaster does not shock the caste ties enough to shatter them. The economic self help groups in the village find it difficult to run because of the large number of cases where people default at payments. The financial assets are also low because of high amount of debt ridden cases in the village. Most of the households were found to be without any savings which they could rely on. People talked about their inability to borrow from their relatives and others in the village because of the loss of faith as the continued dependency detracts the lenders. The physical assets in the village are also low. The lack of proper infrastructure such as dilapidated houses, open defecation and lack of potable drinking water in the village increases their vulnerability during floods. The human assets in the village are underdeveloped. The primary health and education suffer because of floods and poor infrastructure in the village. Clearly the image of assets in the village is highly miserable. The vulnerability and poor resilience against the floods is a harsh reality of the lives of the people in the village.

This research has argued that the caste and gender locations within the social structure of the village society impact the vulnerability from the floods. The vulnerability from socio economic factors in the condition of the recurrent floods is not homogenous

across the affected people. Apart from this, disabled and the elderly people in the village are differently vulnerable from others section and groups of people. Most of the households in the village belonged to lower economic class. Very few houses were relatively better. However, the relatively better households belonged to the dominant caste people in the village. The lower caste households in the village belonged to the lower economic class without exception. They had their houses in the lower area of the village which remained submerged in water after floods for the most time during the year. Not just the geographical location, the structure of the houses of lower caste households reflected their severely weak economic situation. The houses could hardly sustain the pressure from the floods and remained under its impacts months after the flood is over. The lower caste households were found to be in frail political situation which indirectly increased their vulnerability from floods. Since most of the administration and politics in the village was dominated by the dominant caste households, they had very less leeway among them. The other households belonging to dominant caste received relief and other resources earlier and more easily than the lower caste households.

The women are another major group that is more vulnerable than others in the village. The concerns of women in the floods and afterwards are overshadowed in the male dominant society. The need for security and safety during floods, hygienic sanitary conditions and proper medical facilities for pregnant women and young girls rarely got separate consideration from the concerns of men in the society. Their share of duties in the household are unequally divided where they carry the maximum burden of care giving and cooking roles. They take care of the old, weak and the children which leave them with less time for their own selves. During the disaster, they have to depend on other women for procuring themselves even basic services. While men have greater access to the public spaces and resources, such mobility is unavailable and unimaginable to women in the village. Even though because of the increased migration of men the role and responsibility of the women in heading their households have expanded, they still continue to function within the permitted module for women in the village. Their lack of participation in the decision-making submerges their voice under the voice of men masquerading as the village community. As evident in the case of

female sarpanch of the village they failed to assert authority even when in the position of power. Similarly, the elderly in the village also face many oddities during recurrent floods. They give up during a disaster to not bother the younger members in the family much. They sustain on the pension that they receive. They keep working till a very long time over what their age permits. The lack of proper medical facilities in the village makes them particularly vulnerable as for them travelling to the city is an exhausting exercise.

This research has argued that the impact of recurrent floods on a society ridden with hierarchies of caste, gender and other disabilities is also differential along these lines. The weaker sections of the society due to their lower social standing are more vulnerable from floods as compared to the upper caste households. It is significant to note that the social structures that are created in the society decide the consequences of disaster on the affected population. Further, we have seen that the certainty around the advent of disaster does not shock the population out of these social barriers. These boundaries and hierarchies work in perfect tandem with recurrent floods. While in the case of sudden disaster like earthquake or landslides, the society may jump out of its hierarchies, in the case of recurrent disaster, the social structures continue to remain stringent.

Against the vulnerability arising from the recurrent floods for several years, people have developed their own mechanisms to build barriers against its impact. Although they are not enough in themselves yet they are important to build resilience against the recurrent floods for the village community. The community resilience and coping strategies adopted by the people are crucial in recurrent floods to provide them a buffer against the large scale impact of floods. Economic development is one of the indicators of the community resilience. The people in the village engage all their members into whatever earning they can get for the house. They find themselves engaged in multiple avenues of work and do not depend on any one source. Social capital is another major strategy which they strengthen to build resilience against recurrent floods. The groups based on caste and gender ties help them secure material and emotional relief from disaster. These ties help them in procuring jobs when they migrate to the city. People are dependent on each other's support, physical and emotional ties to build resistance

against the floods. Timely and adequate information and communication also contributes to building resilience against disasters in the village. Benchmarks are set by people to identify when to start vacating their houses. Apart from that indigenous knowledge and experiences that have stood against the tides of time in the floods are also put to defense against the floods.

This research also looks at the response of the state in dealing with the situation of recurrent floods in the village. The National Disaster Management Act of 2005 that establishes institutions at the national, state and district levels for the management of disasters. It adopts a cyclical approach to disaster management where the prevention and mitigation of disasters become equally important as the response and recovery. A series of steps are taken at the district level where the higher authorities prepare the plan for controlling the floods in the village and the ground level authority work at implementation of the plan and reporting back for alterations. However, the inadequacies of the process become evident when people share their concerns. India is a signatory to Sendai Framework for Disaster Risk Reduction 2015- 2030 which sets forth several new guidelines for reducing disaster risk among the people. In May 2016, the Government of India and National Disaster Management Authority released the National Disaster Management Plan (NDMP) on the lines of the Sendai Framework. The National Disaster Management Plan (NDMP) attempts to incorporate all the recommendations argued by the Sendai Framework. The Plan provides a framework and direction to the government agencies to adopt for all phases of disaster management cycle.

If we focus on the major themes highlighted in both Sendai framework and the NDMP, they can be narrowed down to the four concepts of coordination and cooperation between the various government agencies and people, Governance, Rehabilitation and Capacity Building. The plan is yet to be executed to analysis the implication on the field. However, the field has important concerns to raise to the plan and its implementation. Despite a long history of recurrence in the region, the people in the village were found to be unaware about the existence and the functioning of the DDMA. Further, those who did know about the district authority for the disaster management were invariably the leaders in the village including the grampradhan. The

marginalised section of lower caste and women were removed from any experiences of communication and information exchange with the government. An important concern that is highlighted in the work is attached with the question of governance. The repeatability of floods every year in the village has contributed to the rise of a nexus between few key personnel in the village and the government officials. While the people blame the leaders and government officers of corruption and mishandling of funds in compensation, the government officials share a belief in the veracity and dishonesty of the people. They argued that the people lie about total number of households, death of livestock, and other losses in order to gain more compensation. Although this is true for certain individuals and households but a large majority of the poor households do not even get the basic minimum.

What is important to note is that the claims from both the sides have to do with the nature of disaster in the village. The sustained state of poverty in the village has led to a certain anxiety among the people to ensure monetary help from all the sources possible. The lack of political will to elevate the situation of the people in the village among the leaders has also contributed to this situation. With not much expectation from government in addressing the multiple challenges that occur during the floods, compensation in terms of money, as high as it could be, remains the only source for the people to help themselves from the dire situations. The nexus continues uninterrupted along with the recurrent floods.

## **8.2- Discussion**

If one were to recall the discussion on livelihood in the floods situations it was argued by Sasmati et. al. (2012) that the vulnerability of the household with regard to the specific disaster of flood can be measured in terms of a perceived threat to life, injury to oneself or another household member, loss of household property and crop loss, narrowly escaped from being washed away, seen the nearby village being washed away, death of relatives in flood, witnessing being injured or dead, heard of someone in the town or village who was injured or dead in flood, and house damaged fully or partially, overall damage, damage to property, financial loss, and relocation experience. However, in the study of the Neerpur village, it emerged that the recurrent floods did

not cause devastation as a spectacle. The destruction was not so much in terms of the threat to the lives of the people as much on their livelihood and everyday routine. The recurrent floods in the village continued with a sense of normalcy and alternative routine as explained in the work. The livelihood of the people were restructured and re-routinized because of the recurrent floods. In such a situation, the indicators that were crucial in measuring the vulnerability of the household with regard to floods were changing livelihood pattern, changing crop cycle and rate of migration. The other impacts of the floods were perpetual poverty, dilapidated infrastructure, poor medical and educational facilities, lack of investment, stigmatization and lack of enthusiasm among the people.

Further, if we analyse the work in comparison to the study by Fothergill (2004), Lindell and Prater (2003) and Ninno & Lundberg (2005), it emerges that even though the work confirms their understanding of vulnerability of the population from floods, the experiences continue to be different. In the village Neerpur, it was found that the lower income households were more vulnerable to floods as compared to higher income households as argued in the mentioned works. The lower income households were deprived of flood insurance and inadequate compensation. Yet, the experiences in the field also indicate at an attached story missing from other works on floods. The village depicted a story of not just underdevelopment but also selective rejection from the concerns of development and policy making. The village depicted a situation of deep poverty and underdevelopment along with seasonal floods that repulsed attention and investment from both government and private sources.

The Sustainable Livelihood Model has been endorsed for improving the state of livelihood in hazard prone areas by several scholars like Chambers (1988), Kollmair and Gamper (2002) and Ashley & Carney (1999). In the work, however, it emerged that the weak asset base along with seasonal floods punctured the development of livelihood opportunities. The underdeveloped livelihood base in the face of recurrent floods gives rise to a cycle of poverty in the village. The repetition of life-crippling floods in the village perpetuates economic poverty along with involuntary expenditure on the recovery from the impact of the floods, which in-turn weakens the asset base. This weak

asset base fails to add any strength to the livelihood of the village. And the cycle of poverty continues uninterrupted. There is no money to boost the asset base; as a whole, it is just a bare minimum. The lack of alternative skills and capabilities among the people binds them to the situation in the village with a sense of hopelessness against the perpetual poverty from recurrent floods. Thus, the Sustainable Livelihood model is difficult to be sustained in the context of severe vulnerability from recurrent floods without altering the situation of asset base. The asset base has to be strengthened separately from other development areas keeping in the mind the toll of the recurrent floods.

Sustainable Livelihood Model is an appropriate framework to understand livelihoods but in this context of the study area, it shows that the entire asset base is already in a dilapidated situation unable to hold the pressure from the floods. It is unequipped to deal with disaster and continues in a miserable condition because of the floods. The need is to develop asset base independently to deal with floods in the village and further add the basic minimum assets necessary for the livelihood of the household. The infrastructure to deal with the floods has to be built and emphasized independent from the regular household base needed for pursuit of livelihood.

Apart from the Sustainable Livelihood Model, the Social Vulnerability Approach has also proved helpful in understanding the vulnerability of the affected people from recurrent floods. The understanding that took into account the socio-economic vulnerability of the people in calculating the overall impact of the floods added nuances to fully take grasp of the situation of livelihood and beyond. The works of Weist et. al. (1994), Brody et. al. (2008) and Care International (2002) were confirmed from the field where it was found that women-headed households encountered double burden of managing the household within the societal restrictions and boundaries. They were also absent from decision making in the field because they did not believe that speaking among the men was taken in good spirit in the village. Along with this, the caste identity was also an important indicator of measuring the vulnerability of the people. The social hierarchy of the different castes in the village jeopardized the situation of lower castes and challenged their ability to deal with the floods more as compared to the upper castes. The dominance of upper castes in decision making, accessing the



information and compensation also put the lower castes on a weaker pedestal in confronting the situation arising from floods in the village. The field confirmed that the lower caste and lower income households were more vulnerable from recurrent floods.

A crucial aspect that emerged in the work is that recurrent floods in the village have also shaped the imaginations of the people in the village. The relationships of other villages with the people in Neerpur are also cognizant of the floods in a significant way. The social stigma of the recurrent floods determines the relations that the people in the village can forge outside. The people in the village mentioned the problems they faced in finding a match for their son or daughter for marriage as nobody wants to form a bond with a family in the village that struggles against floods every year. They had to lie about their residence to get their sons married. These notions of stigma ran common in the nearby villages and among the government officers also. The latter considered the people of the village to be dishonest and prone to overestimating the losses in order to procure compensation. A sense of fatalism among the people was also prominent where they did not believe or expect change in their situation. The recurrent phenomena of the floods had accrued to them a sense of hopelessness. Their coping strategies with the floods also depicted this sense of lack of hope as they resorted to an alternative routine and did not complain about much about the ignorance and apathy.

The response of the government at the local level also depicted this casual attitude. A nexus of corruption emerged in the village where the government officers blamed the people at being dishonest about the loss incurred and the people blamed the government officers for being corrupt. The recurrent phenomenon of the floods has led to a routinisation of the response from the local authorities where they can continue with their lackadaisical approach without getting any attention and pressure from higher political and administrative authorities. There is no attempt from the local authorities to document, upgrade and enrich their experiences for a better conduct at managing the disaster situation. There is hardly any change in the planning at the district level to deal with the recurrent floods that may contribute to substantial improvement at the ground level. The only thing that changes every year is total amount of compensation allotted to the people. The latter also because of their fatalistic attitude towards floods were found

to be complacent with the compensation money and did not hold the authorities and other political leaders accountable for the response during and post disaster.

The approach of the National Disaster Management Authority as indicated in the Disaster Management Act (2005) also comes across in the field as response centric. As against the cyclic approach adopted in the Act to deal with prevention, mitigation and response of disaster, it ends up on the ground emphasising only on the response aspect. Despite the floods being the recurrent phenomenon, there is hardly any focus and attention paid to the mitigation and prevention aspects. The perpetual poverty and under development in the flood affected village clearly depicts that there is no progress and investment on the prevention and mitigation fronts of dealing with the floods. This renders a setback to cyclic approach of the DM Act, 2005 which aspires to strike disaster in a comprehensive and wholesome manner.

In the face of existing situations, it is crucial that as the country is becoming a signatory to the Sendai framework, 2015, the differences in the existing planning in terms of poor implementation at local level, lack of coordination between various departments, lack of political will and poor governance at the ground level, must be improved. The Sendai framework allots targets and balances to be achieved within the period of fifteen years for the signatory countries. It is of utmost importance for the national authority to adopt these targets as challenges in the NDMP (2016) to be met. These targets however can be completed only if the issues and faults at the local level are addressed. As, we have discussed these challenges exist at multiple levels of theory, social conditions, policy making and the implementation levels. For a comprehensive approach to dealing with the disasters, it is important to consider these levels simultaneously. Following section mentions some of the recommendations based on the research in the village affected by the recurrent floods to be adopted for a better management of disaster.

### **8.3- Recommendations**

This research explored several situations and factors that contributed to the vulnerability from recurrent floods across various categories of caste, class and gender. It also discussed the international framework and national plans and policies for mitigation, prevention and preparedness of the disaster. The field of recurrent floods has thrown several challenges at the theoretical-conceptual and practical levels of disaster management. It is important to understand these challenges in order to drive home recommendations. These recommendations concern the actors and agencies at multiple levels. They are crucial as they enlighten the path forward for disaster management in the country.

The issue of livelihood has emerged as the most prominent challenge in the field of recurrent floods. To address it adequately, the need is to analyse the field first in its uniqueness and specificity. As we have seen, the policies that work in the village Neerpur were mostly designed to address poverty. The question of recurrent floods did not figure in the framing of the policy. Further, even in the conceptualisation of disaster, the dominance is that of the understanding that is based on sudden disasters. The particularities of recurrent disaster are not dealt separately. The results of such ignorance are widespread in the field where the disaster management is limited to assuring shelter and compensation. The life-altering impacts of recurrent floods are hardly shown any concern. The crucial need, therefore, is to address the issue of recurrent disaster in the field of disaster studies and also in policy frameworks. Moving on, if the question of livelihood is vital in disaster studies, it becomes of utmost importance to develop methods to grasp the situation of livelihood in multiple fields. One rule for all fields fails to provide adequate information about the livelihood situation. In the field of recurrent floods, some of the key indicators that could be employed to analyse the livelihood situation was through looking at the changes in the land use pattern, migration pattern and changes in the livelihood pattern.

The changes in the land use pattern can be helpful in conveying information about the changing state of agriculture in the field. This shall enable one to understand the impact on agricultural productivity in the situation of recurrent floods. This work has

contributed by trying to depict the changes from short term crops to long term crops in the agricultural production. Further, the migration pattern and its impact on the household is also an important indicator to understand the situation of livelihood. The work argued that the women headed households adopted livestock as an alternative source of livelihood after the men went out to work. A third crucial indicator is to measure the changes in the livelihood pattern. The work has discussed that people simultaneously pursued multiple occupations such as boatmen during and after floods and daily wage laborers on the rest of the days. These indicators, which the study highlights, can contribute significantly to the analysis of livelihood in recurrent disaster and further strengthen the policy frameworks for disaster management. These indicators demand that the understanding of livelihood in the field of recurrent disaster go beyond poverty eradication to developing sustainable long term livelihood programs in such contexts.

### **8.3.1- Developing the Livelihood Opportunities**

It emerged that the recurrent floods had weakened the existing opportunities of livelihood in the field. This was combined with an absolute lack of endeavor to promote alternative means of livelihood. Agriculture is an important source of livelihood that has to struggle against the impact of recurrent floods, lack of protections from the government and guidance with regard to choice of crops. In order to address these challenges, it is recommended that the crops selected in the region work in tandem with the flood season as well as meet the standards of productivity. The agriculture in the field requires crop insurance at priority so as to develop confidence among the farmers from the government. To promote the use of short term crops, crop insurance is important to detract the farmers from long term crops and their false promise of high productivity. Further, alternative sources of livelihood must be strengthened in the case of recurrent disaster. The fisheries in the village could be developed with adequate spaces and mechanisms. If attention is paid to professionalize the fishing work, it can help many people into pursuing it as a full time source of livelihood. The entire region under recurrent floods could be channelized into developing a production zone for fisheries in the state.

This brings to the state of assets in the situation of recurrent floods. It emerges from the work that out of the box efforts are required to develop the assets among the people. The skills and capabilities that can translate into job opportunities for the people must be introduced. The infrastructural needs of the village such as the road network, electricity, sanitation, health care, educational facilities and vocation training programs are significant to facilitate the growth and development of the village. This shall also impact the social image of the village and strengthen the confidence of the people. Financial support in the form of strengthening the self help groups through public-private partnership is also strongly recommended. To realize these recommendations, it is absolutely necessary to deal with areas of recurrent disaster above political loss and gains. In various government pilot programs and development policies, the region must be included as a priority. The goal-oriented policies often bar these regions lest the skewed numbers shall disturb the narrative of victory. The work recommends that these villages be recognised for involuntary adoption in government policies and programs.

### **8.3.2- Assessment of Context Specific Social Vulnerability**

The context of social vulnerability in the field of recurrent floods is also an important area that needs to be addressed. The field has opened challenges where the vulnerability from disaster is translated differentially for different segments of the society. In such a situation, it becomes clear that any attempt of disaster management cannot become successful without taking into consideration the context of social vulnerability. The specificity of the field is crucial to understand the social vulnerability from/of disaster. The recurrent floods in the village do not disturb the caste and gender hierarchies. The yearly phenomenon continues to function in tandem with existing social structures. The assessment of context specific social vulnerability is necessary for effective planning. To address the social vulnerability, it is recommended to bring the weaker sections into decision-making. The idea is to go beyond mere rhetorical steps to substantial actions. The lower caste and women must be included mandatorily into committees that concern with policy decisions for disaster management. The representation of these groups must be given roles of leadership and authority in these committees.

The idea is to bring women and lower caste members to the disaster management. The focus must be on strengthening gender sensitive infrastructure such as proper sanitation facilities during floods, permanent presence of male and female medical staff at the sub-centre and separate fully equipped health camps in the shelter for women and children. The lower caste and women must be included in skill and capability development programs. The self help groups run by women and the lower caste members must figure in the state support policies. The aim is to strengthen the financial and human assets of the lower caste and women in the village on priority. Other vulnerable sections such as the physically challenged, elderly and the children must be given priority in relief and rescue programs. The existing social welfare schemes must be revised to address the basic needs and expenditure of these people. The social vulnerability of the disaster affected people must work with importance in the planning and policy implementation in disaster management.

### **8.3.3- Defining Roles and Responsibilities**

Another important segment in the work is with regard to the role of the state in mitigation, preparedness and prevention of disaster. The work discussed that the recent adoption of Sendai framework and the national plan developed on its line which has included some crucial themes. If we analyse the recently introduced National Disaster Management Plan (2016), it is evident that even though most major themes from Sendai Framework have been included in the plan, the ambiguity with regard to the authority allotted with the specific roles and responsibility remains. It was also recognized at the 2nd National Platform for Disaster Risk Reduction (NPDRR-2017) that while the Sendai Framework mentions specific targets, the NDMP shies from declaring the targets. The targets that are to be aimed at, in the period of 15 years, are undefined in the document. The documents fail to mention the specific agencies and departments that will perform various roles and responsibility at the local levels. Such ambivalence detracts accountability. It is recommended that the targets and goals should be set with active consultation with the local authorities. These targets must also be region and context specific.

### **8.3.4- Strengthening District Level Authority**

This brings to the recommendation of strengthening the district level authorities for disaster management. It is brought out from the work the district level authority is the most important part in the execution and implementation of the plans and policies of dealing with disaster. The accusation of corruption, the caste and gender nexus between government officials and dominant leaders in the field and lack of accountability were commonly levied against the local level authority for disaster management. In such situation it becomes very crucial to alter the very nature of the DDMA. It is recommended that the progressive and development oriented themes that are specified in the plans must be percolated and advanced to the district level authority. Specifically in the field of recurrent disaster the local government authority assumes a run-of – the-mill attitude. It is important that in the region affected by the recurrent disaster, a sub center be instituted responsible for dealing with the disaster. The sub-center shall be accountable to the various Gram Sabhas of the villages under the region. It shall work with their cooperation and consultation. Compulsory memberships of women and lower caste representatives should be ensured. The sub- center shall report to the district, state and national level disaster management authorities. The continuous engagement of the sub- center shall aim to strengthen the community participation in disaster management, sharing of knowledge and information and ensuring the mutual cooperation of government and public actors during floods. The sub- center is an important requirement in the fields under recurrent disaster. In other regions, attention must be paid to cementing the role of district authorities and ensuring their accountability.

In brief:

- a) Separate analysis of recurrent disaster and its implications is required at the conceptual and policy framing levels.
- b) The livelihood analysis, its improvement and generation, must be given priority in disaster planning, going beyond poverty eradication.
- c) The asset base must be strengthened in and added keeping in mind the disaster situation.

d) The social vulnerability must be addressed and tackled with effective mechanisms at both policy framing and implementation levels.

e) The targets and goals must be fixed, in consultation with local authorities to ascertain accountability.

f) Disaster management sub- centers must be established in regions that are under recurrent disaster separate from district authority.

All these recommendations are to be addressed with a sense of immediacy and urgency. The recently introduced NDMP opens fresh fields for discussing disaster management with fresh aims and objectives. This work attempted to highlight the uniqueness and particularities of a major disaster in the country – recurrent floods. It challenges the dominant idea of sudden disaster in ways more than one. The aim of this work is to add to the broad corpus of works that bring out the truths from the margins of the country which is often left unattended in the mainstream planning and policy making. Even though the field addressed in this work struggled with sense of hopelessness and despair, it did not leave them with a voice. The work attempted to bring out this voice in the forefront to be able to claim its right to be heard in the hope that this shall find its appropriate place.



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## **Appendix – 1**

### **Suggestive list of indicators for Vulnerability Mapping in Dalits areas**

#### 1. Indicators of Protection and Social Security

- a. Nature of caste domination
- b. Response to rights assertion
- c. Level of faith and confidence of Dalits in law enforcement agencies and statutory bodies

#### 2. Special Groups

- a. Women (widow, single women, women led households, pregnant women)
- b. Children
- c. Elderly
- d. Disabled
- e. Destitute
- f. Orphans

#### 3. The issues- social, cultural and caste based practices

- a. Free labour and chakari (Dalits are used as messengers only for informing others of meetings etc.)
- b. Obligatory caste-linked works
- c. Forced subservient behaviours (devdasi)
- d. Safai karamachari (sweepers and manual scavengers)
- e. Ability to assert their rights

#### 4. The issues in development policies

- a. Lack of special policies
- b. Non-implementation of existing policies of compensation and rehabilitation
- c. Lack of a policy guidelines to address inclusion of Dalits in DR-DRR
- d. Mainstreaming disaster in development projects
- e. Lack of proper land documents

5. The Issues in service delivery
  - a. Lack of information about the existing government schemes
  - b. Availability of service centres
  - c. Service centres influenced by dominant castes
  - d. Disaster resilient service delivery infrastructure
  
6. The Issues of geographical positioning- Locational vulnerability
  - a. Areas of habitation
  - b. Non-disaster resilient housing
  - c. No policy to rehabilitate Dalits that reside in disaster prone areas
  
7. Indicators to determine community's coping mechanism
  - a. Contingency plans( materials, trained human resources )
  - b. Traditional coping mechanism (houses on raised plinth)
  - c. Presence of community level institutions
  
8. Indicator/s for identifying household level readiness
  - a. Household level preparedness and plans ( important valuables for rapid recovery)
  
9. Indicator for identifying housing conditions
  - a. Number of homeless families
  - b. Number of safe/unsafe houses
  - c. Have their own land for house or not (it s the government land or private land)
  - d. Over crowded
  
10. Indicators for assessing availability of physical amenities
  - a. location, accessibility and functionality of roads, schools, local social service, institutions and providers, community hall, road network , drainage, drinking water facility
  
11. Indicators for determining economic sustainability among Dalits
  - a. Landholding patterns
  - b. Land under the illegal occupation of dominant caste

- c. Productivity and integration of land
- d. Credit facilities available to them
- e. Level of education and trades carried out
- f. History of land in relation with disasters
- g. Private/Government employees
- h. Migration
- i. Child labour
- j. Types of crops grown
- k. Crop insurance
- l. Small and medium enterprises
- m. Livestock ( types, products)
- n. Storage of food grains and livestock
- o. Sources of income
- p. Sources of credits

12. Indicators for assessing political representation of Dalits

- a. Political participation
- b. Political discrimination
- c. Political division within the community



Appendix -2

**FORMAL QUESTIONNAIRE SCHEDULE**

**1- Demographic Information**

1.1. **Name:** \_\_\_\_\_

1.2. **Address:** \_\_\_\_\_

1.3. **Age:** \_\_\_\_\_ years

1.4. **Religion:** (1) Hindu (2) Muslim (3) Other (Specify)

1.5. **Gender:** (1) Male (2) Female

1.6. **Caste:** (1) SC (2) ST (3) OBC (4) General=4

1.7. **Types of family:** (1) Nuclear (2) Joint

1.8. **Total annual income of the family:** \_\_\_\_\_

(1) Below Rs 50000 (2) Below Rs 100000 (3) Below Rs 200000

(4) Below Rs. 500000 (5) Above Rs. 500000

1.9. **Education:**

(1) No school qualifications (2) Lower primary (3) Upper primary

(4) High school (5) College (+ 2, +3) (6) Higher Education (M.A. OR above)

(7) Vocational training.

1.10. **Employment status:** (1) Self-employed (2) Employed (3) Part-time employed

(4) Unemployed (5) Retired

1.11 **Marital status of the head of household** (1) Unmarried (2) Married

(3) Divorced (4) Widowed

1.12 **Total number of family member** (1) 2 to 4 (2) 4 to 6 (3) 6 to 8

(4) 8 to 10 (5) more than 10

1.13. **Location** (1) Upper Basin (2) Lower Basin

1.14 **Housing** (1) Own

(2) rented

**1- Livelihood –**

**2.1- Individual Livelihood Pattern**

. What is the major livelihood strategy of household? Please give the answer bellow...

		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>1</b>	Main Occupation	Cultivation/ ploughing	Fishing	Daily wage worker	Government Service and Private Job	Business 1- Small 2- Medium 3- Large	Other(specify)
<b>2</b>	Secondary Occupation	Cultivation/ ploughing	Fishing	Daily wage worker	Government Service and Private firm Job	Business 4- Small 5- Medium 6- Large	Other(specify)
<b>3</b>	Livestock particulars	Dairy related Animal	meat related animal	Transportation related animal	Poultry Bird	Other(specify)	
<b>4</b>	Main livelihood activity (% of hh)	Crop farming	Livestock rearing	Self employed	Employed outside district	Other, (specify)	
<b>5</b>	Primary irrigation source	Well	Electric Tube well	TW Canal	Pumped from surface water	Other, (specify)	
<b>6</b>	Category of land	Homestead-land (HSL)	Irrigated agriculture land(IAL)	Non-irrigated land(NIAL)=	Forest and other land	Other, (specify)	
<b>7</b>	Categorization of village households (% of hh)	Landless laborers	small farmer	Medium farmer	Large farmer	Other((specify )	

Other Specify

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<b>8.</b>	Possession of land	Own  Tenant  Encroached  Land less laborer
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9.	Indebtedness	For production purpose For daily consumption purpose For special occasion For both production and consumption purpose Other purpose
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2.2. What are the three main sources of livelihood for most households in the community?

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2.3. What are the three secondary sources of livelihood for most households in the community?

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2.4. What are the three main sources of income?

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2.5. What are the three main sources of food?

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2.6. How would you describe the impact of the floods on people's livelihoods?

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2.7- Did you suffer loss of income due to flood? Please elaborate.

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2.8 Were other members of your household temporarily or permanently out of employment during the floods?

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2.9 Were you forced to take any subsidiary occupation post flood?

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2.10 Migration (in no of days, destination)

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2.11 Please indicate annual migration patterns within the village/villages as dictated by economic activities.

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2.12 Were you forced into indebtedness due to flood?

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2.13 Did you sell your livestock or other assets post flood for consumption?

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**2- Impact of Floods**

**Flood experience**

- a. How do you perceive floods as a phenomenon?
- b. How frequent is the flood in the area where your house is? Have you experienced flood previously?
- c. Did you have any flooding in the area you live in last one year?
- d. Do you think flood or any damage due to flood was unexpected in any ways?
- e. Did you get water into your establishments e.g. house, agricultural land or any other piece of land during the flood?
- f. Were you forced to evacuate your house due to floods during the hazard?
- g. Did your near ones suffer damages, loss of resources or injury due to flood?
- h. Have you seen any flood hazard zone maps for your district and state?
- i. Do you know the disease and other risk involved during and after flood?
- j. Do you know have any idea about the flood warning system in the state?
- k. Do you know what steps to follow immediately after the flood warning is issued?
- l. Do you know what precaution to follow to avoid the risks?
- m. Do you think prior experience makes you prepared for the future events

3.1. - How was the flood experienced different from other years (in terms of timing, level, etc)

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3.2. What was the effect of the flood on the following:

Areas	Level of Effect Level of Effect 1 = No Effect 2 = Moderate 3 = Severe	Comment
Crop (Production)		
Crop (Stocks)		

Livestock		
Health		
Water (Access)		
Sanitation(Access)		
Infrastructure		
Housing		
Property		

### 3.3 Housing-

3.3.1. Did your house collapse due to floods? 1 = Yes 2 = No – (go to 3.5)

3.3.2. Did the collapsing of the house force you to relocate to a new area?

1 = Yes 2 = No

### 3.4- Property/ Assets

3.4.1. Did the house lose any of the following property or asset?

1 = Yes 2 = No

Please specify (Bed, Fishing, Net, Boat/ Canoe, Bicycle, Radio, Plough, Hoe, Ox – Cart, Television, Chairs)

3.4.2. Others;

Specify: \_\_\_\_\_

### 3.5. Agriculture

3.5.1. List three main staple crops that you grow:

3.5.1.1. \_\_\_\_\_

3.5.1.2. \_\_\_\_\_

3.5.1.3. \_\_\_\_\_

3.5.2. Did the household experience crop damage during the floods?

1 = Yes

2 = No

3.5.3. Was the main staple crop the one which was damaged?

1 = Yes                                  2 = No

3.5.4. Did the household experience any loss of food stocks during the floods?

1 = Yes                                  2 = No

**3.6- Health Facility**

3.6.1. Are there any health facilities in your area?

1 = Yes                                  2 = No

3.6.2. Was there any damage to health facilities due to the floods?

1 = Yes                                  2 = No

3.6.3. Was there any disruption in access to health services due to the floods?

1 = Yes                                  2 = No

3.6.4. Did any of the household members get sick during the floods?

1 = Yes                                  2 = No

3.6.5. Which of the following diseases were experienced by the household members who got sick?

Diarrhea	Cough/ ARI	Malaria/ Fever	Measles	Other
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**3.6.6 Other services**

Antenatal care	No	Once	Thrice	Fourth	Fifth
Place of delivery:	: Home= HO	Health Centre = HC	Hospital =HS	Pvt Clinic=PC	other (specify)
Place of child immunization	Private clinic	CHW	ANM	Hospital	other (specify)
Where receive treatment?	Traditional healer	CHW	ANM	Hospital	Private clinic

**3.7- Water Availability**

**3.7.1**





6	Have you seen any flood alarming system in your region.	Yes ( )	No ( )	Unsure ( )
7	Do you know who is the authentic person to meet during the disaster	Yes ( )	No ( )	Unsure ( )
8	Do you think media (local newspapers and TV channels) can play a positive role in flood preparedness	Yes ( )	No ( )	Unsure ( )
9	Have you ever expose for the disaster related information via through Radio, TV, Newspaper	Yes ( )	No ( )	Unsure ( )
10	Do you think sufficient information is available for the stakeholders?	Yes ( )	No ( )	Unsure ( )
11	Do you think information is loud and simple for layman to understand?	Yes ( )	No ( )	Unsure ( )
12	Do you think people make adequate use of information available prior flood?	Yes ( )	No ( )	Unsure ( )
13	Do you think preoccupation with the major floods, underscores the aid and assistance for minor floods	Yes ( )	No ( )	Unsure ( )
14	Do you know the disease and other risk involved during and after flood	Yes ( )	No ( )	Unsure ( )
15	Do you know what precaution to follow to avoid the risks	Yes ( )	No ( )	Unsure ( )
16	Do you know the importance of tree in flood prevention	Yes ( )	No ( )	Unsure ( )
17	Do you know what to do after getting the flood warning	Yes ( )	No ( )	Unsure ( )
18	Do you think flood is given adequate attention in disaster mitigation and preparedness programme in the region	Yes ( )	No ( )	Unsure ( )

**3.9.2-**People learn more from the empirical experience, then other sources, such as newsletter containing flood related information, or other popular means of communication about flood preparedness and flood hazard

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### 3- Flood preparedness

1.	Do you know the route to the nearest safe shelters that you are	Yes ( )	No ( )	Unsure ( )
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	aware off.?			
2.	Do you keep the First aid kit ready with extra medication for snake bite and diarrhea?	Yes ( )	No ( )	Unsure ( )
3.	Do you have strong ropes for tying things?	Yes ( )	No ( )	Unsure ( )
4.	Do you keep a radio, torch and spare batteries?	Yes ( )	No ( )	Unsure ( )
5.	Do you keep stocks of fresh water, dry food, candles, matchbox, kerosene etc?	Yes ( )	No ( )	Unsure ( )
6.	Do you have umbrellas and bamboo sticks (to protect from snakes)	Yes ( )	No ( )	Unsure ( )
7.	Do you go to the higher ground where people and animals can take shelter	Yes ( )	No ( )	Unsure ( )
8.	Determine what to move up, out or away, and then do it: farm animals, feed supplies, furniture, clothing, medical equipment/medicines, important family papers, Jewelry, food, etc.?	Yes ( )	No ( )	Unsure ( )
9.	Avoid roads that will probably be blocked by water.	Yes ( )	No ( )	Unsure ( )
10.	Keep ration ORS packet/ alum, dry food and baby foods ready	Yes ( )	No ( )	Unsure ( )
11.	Do you know any shelter house nearby?	Yes ( )	No ( )	Unsure ( )
12.	Do you know how to prepare temporary shelter house?	Yes ( )	No ( )	Unsure ( )
13.	Do you verify whether sand bags are kept on the riverbank before the river overflows?	Yes ( )	No ( )	Unsure ( )
14.	Do you participate in community discussion regarding flood preparation?	Yes ( )	No ( )	Unsure ( )
15.	Do you keep valuable things safely before a flood warning?	Yes ( )	No ( )	Unsure ( )
16.	Have you made your loses flood resistant (built a pukka house increased the heights of the base line etc) as you are subjected to recurring floods?	Yes ( )	No ( )	Unsure ( )
17.	Do you finish crop cutting before the flood season?	Yes ( )	No ( )	Unsure ( )
18.	Do you attend meeting held by schools /NGOs / Govts for purpose of establishing flood preparedness?	Yes ( )	No ( )	Unsure ( )

#### 4- Household Coping strategies

1=Not at all,	2= occasionally,	3=moderately,	4=frequently,
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5=always						
1.	Selling of Livestock.	1	2	3	4	5
2.	Livestock rearing.	1	2	3	4	5
3.	Wage earning along with family.	1	2	3	4	5
4.	Rope making etc.	1	2	3	4	5
5.	Start small business.	1	2	3	4	5
6.	Using resistant crop varieties.	1	2	3	4	5
7.	Share -cropping.	1	2	3	4	5
8.	Building up stock and inventories.	1	2	3	4	5
9.	Joint cultivation.	1	2	3	4	5

## 5- Support

### Community support

- 1.1 What is the most important source of help in the community?
- 1.2 What is the most important source of help in the community post floods?
- 1.3 Do you think your household is efficient to deal with the crisis?
- 1.4 What is the most potent form of assistance available to you post flood?
- 1.5 How do you reciprocate this assistance?
- 1.6 Do you think you can get help easily in case of a hazard?
- 1.7 Do you think villagers work together and help each other post flood?
- 1.8 Do you think community mobilization can produce better results without any external aid (such as government body or NGOs)?
- 1.9 When there is a decision to be made in the group, how does this usually come about?
- 1.10 How are leaders in this group selected?
- 1.11 In case of emergency (e.g. crop failure or natural disasters), who would approach to the local authority for the petition?
- 1.12 Is there any committee for the common decision in the group and who is the member of this community?
- 1.13 Role of the vulnerable section (women, children, elderly population) in the groups.
- 1.14 Is there any community center for the social support?
- 1.15 **To what extend you received the following help when needed after flood?**  
**1=Not at all, 2= occasionally, 3=moderately, 4=frequently, 5=always Put a tick (✓) against the items that apply to you.**

1=Not at all, 2= occasionally, 3=moderately, 4=frequently, 5=always						
1.	Child care reciprocity	1	2	3	4	5
2.	Food borrowing	1	2	3	4	5

3.	Sharing shelter	1	2	3	4	5
4.	Lending of agricultural tools	1	2	3	4	5
5.	Lending money	1	2	3	4	5
6.	Material support from neighbor/relatives	1	2	3	4	5

### Government support

Did you get government support regarding the following? If yes then

1 =Not at all, 2= occasionally, 3=moderately, 4=frequently, 5=always						
1	Providing food and other emergency aid.	1	2	3	4	5
2	Rebuilding a base for subsistence food production.	1	2	3	4	5
3	Help in income generation through agriculture.	1	2	3	4	5
4	Help in non-agriculture income generation.	1	2	3	4	5
5	Rebuilding of public service.	1	2	3	4	5
6	Coping with disease burden	1	2	3	4	5
7	Demarcating risk zones.	1	2	3	4	5
8	Construction of village grain bank.	1	2	3	4	5
9	Construction of embankment.	1	2	3	4	5
10	Disaster awareness campaign.	1	2	3	4	5
11	Ready rescue team.	1	2	3	4	5

### Survival strategies for Livelihood

Is there is any change in the following activities due to flood for survival of livelihood strategies. Put a tick (✓) on the number that indicates your feeling 1 = Not at all, 2= No more than usual, 3=moderately, 4=Rather more than usual, 5=Much more than usual

1 = Not at all, 2= No more than usual, 3=moderately, 4=Rather more than usual, 5=Much more than usual						
1	Increase in Illegal activities	1	2	3	4	5
2	Increase in begging.	1	2	3	4	5
3	Permanent out-migration.	1	2	3	4	5
4	Starvation or destitution	1	2	3	4	5
5	Negotiation with job work and wages	1	2	3	4	5
6	Negotiation with work hour	1	2	3	4	5
7	Others family member including Children are also indulge in work	1	2	3	4	5

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