Assessing the Social Impacts of 2005 Earthquake in Tehsil Balakot

By

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**ABSTRACT**

This study is aimed to examine the social impacts of 2005 earthquake on health and housing sector in Tehsil Balakot, District Mansehra. The primary data regarding health, housing and non-monetary services is collected through interviews, questionnaires and direct observations. The respondents were selected through simple random sampling technique as all the community members were equally effected by the 2005 earthquake. The primary data on the social implications of earthquake were collected through pre-structured questionnaire by interviewing 80 respondents. The results shows that the 2005 earthquake has brought severe implications on the people, especially in housing and health sector. It was also found that in housing sector 31.25% of the people are still living in temporary shelters or they are living in the rent's house. Due to which most of the part of their income goes in the rent and they are not able to spend on their children’s health and education. The health sector is still in poorest condition as no proper health facilities are available in the area which makes the people vulnerable to poor health conditions while monetary services sector showed some improvement with the interventions of international and local NGO’S. This study also finds that the role of government in the area was very poor and the people were really unsatisfied by the relief given by the government. This study recommends that in order reduce the disaster’s social impacts government must undertake measures to reduce the physical impacts of disaster through structural and non-structural measures because the physical impacts create the social vulnerability which results to the social impacts in the long run.

**Keywords:** Non-monetary services, Health and housing sector, Social impacts, Vulnerability.

# CHAPTER 1

# INTRODUCTION

Social impacts can be defined as “The effect of disaster on the social fabric of the community and well-being of the individuals and families. As natural disasters are becoming more frequent, expensive and threatening worldwide, it has increased the global economic cost 14 times since the 1950s (Guha Sapir et al., 2004). The impacts of natural disasters are not equally distributed among nations, regions, communities and individuals as a result of differential exposures and vulnerability. Analysing the distributional impacts of natural disasters across income groups in a given country or community is critical for planning, mitigation and recovery from natural disasters. Although the policy has been changing in the last 15 years, from relief assistance to an emphasis on mitigation, the overall trend in disaster management has been to invest in natural disaster response (Board on Natural Disasters, 1999), rather than on mitigating pre-existing social vulnerabilities. While response and recovery have been the main strategies for many countries, including the US, and are critically important for humanitarian, economic and political purposes, they must be accompanied by increasing attention to reducing losses through effective mitigation programs (National Research Council, 1997). Therefore, improving mitigation and preparedness for natural disasters requires knowledge of how and why certain groups are vulnerable.

Globally, statistics show that disasters cause more socially significant and irreversible loss in developing countries, where the poorest and most vulnerable population groups feel the most severe impact. In the developed world, on the other hand, an increasing and significant degree of protection against disasters has been achieved over the years thanks to the availability of resources and technology for the introduction of effective prevention, mitigation and planning measures, together with vulnerability reduction schemes. Even in these countries however, damages have risen significantly as a result of the greater concentration and value of societal activities. To ensure vulnerability reduction, reconstruction programme and projects must be designed within a mitigation and prevention strategy that is part of the development process. Therefore, a set of diagnostic tools is needed to measure the type and amount of damage and losses caused by each type of disaster. Such working tools are not very abundant in the economic literature, especially since they must be able to gauge social, economic and environmental effects.

Social impact assessment can therefore play an important role in the understanding of the consequences and social outcome of projects that are meant to tackle poverty, enhance community development or designed to reduce vulnerability to disasters during environmental emergencies.. According to the Inter-organizational Committee of the U.S. Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service (1994), “social impacts" refers to the consequences to human populations of any public or private actions-that alter, or are capable of altering, the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society. Social Impact Assessment (SIA) is the process of analyzing, monitoring and managing the social consequence of policies, programs and projects. These consequences may be positive or negative, intended or unintended, direct or indirect; they may be short-term impacts or long-term changes. As well as helping to explain how a proposed action will change the lives of people in communities, SIA indicates how alternative actions might mitigate harmful changes or implement beneficial ones.

The extended ECLAC methodology recommends estimating sectorial as well as cross-sectorial impacts of disasters. As for the sectorial assessments, first, the sectors have to be identified that are affected by a disaster. For instance, disasters can influence social sectors (education, culture, health, and housing), infrastructure sectors (energy, drinking water and sanitation, transportation, communication) and economic sectors (agriculture, trade, industry, tourism). In addition, by categorising the damage in each sector into public and private sector, it is highlighted that the disaster impacts in each sector be estimated by comparing the situation that develops after the disaster with the situation that would have occurred without the disaster, i.e., ‘with disaster’ and ‘without disaster’ situation. This requires the need for data and information collection on each sector before the disaster event, including forecasts of how the sector was likely to have developed if the disaster had not occurred (UN-ECLAC/WB 2003).

## 1.1 Social scientist’s view

Social scientists in particular, seem to agree that a disaster could mean different things to different people and thus lead to multiple definitions (Quadrantile 2005 cited in Stallings 2006; Perry 2006). Social scientists, usually focus on disasters’ disruptive nature and define disaster as an event impacting an entire society or some subdivision and avoiding the essential functions of the society (Perry 2006). Similarly, physical scientists and engineers tend to focus more on physical structures including physical and infrastructure damages while economists tend to include disasters’ disruption in the flows of economic activities in addition to impact on physical capital stock to arrive at total impact. Disaster researchers on the whole make an argument that the task of defining a disaster should begin with an examination of its fundamentals such as whether disasters are social phenomena or the result of some natural and/or technological process (Perry 2006).

Natural disasters, which are a frequent occurrence all over the world, have a major impact on countries' social, economic and political situation. Barely a month passes without some part of the world being afflicted by floods, earthquakes, volcanic eruptions, accidents, massive fires, droughts, famines or some other major disaster. Such phenomena cause massive loss of life, directly or indirectly affect large sectors of the population and wreak major damages.

However, research shows that natural disasters cause more devastation in developing countries and that they hit the most disadvantaged population groups hardest. Over the years, the developed countries have devised various ways of protecting themselves from the consequences of disasters by anticipating their risks through prevention and planning measures. Few such measures have been taken in the developing countries, however, where a large proportion of the population lives in precarious conditions, crowded together in flimsy, unprotected dwellings on hillsides subject to landslides or on low land are susceptible to massive flooding.

The geographical location and natural characteristics of the countries exposes the region to frequent natural disasters. Although these disasters may vary in intensity, they usually entail loss of life and damage to socio-economic infrastructures. They also have a serious and persistent impact on the functioning of national economies.

When a disaster occurs, along with the first emergency measures taken by the government and the community concerned, various national and international agencies offer relief, aid and assistance and are often even designated to coordinate the external cooperation received. However, this support, though important, represents only part of the total cost of the necessary process of post-disaster recovery. As a result, one of the most pressing tasks for the country concerned is to make an early, reliable preliminary assessment of the damage.

When a disaster has occurred and while the emergency is still at its height, it is absolutely essential to identify and quantify its effects as accurately as possible as a minimum guide for designing rehabilitation and reconstruction programmes and for identifying the international cooperation that will have to be channelled to the affected country for it to undertake such programmes. While the Office of the United Nations Disaster Relief Coordinator (UNDRO) deploys its programmes during the emergency or immediately after the disaster, ECLAC has often, particularly since the early 1970s, assisted the affected governments in the subsequent task of evaluating the disaster's direct and indirect effects and its impact on the main macroeconomic variables. The experience gained over the past two decades in evaluating the socio-economic effects of dozens of natural disasters of varying magnitude and intensity convinced the ECLAC authorities that it would be both advisable and desirable to conceptualize and standardize their findings in order to produce a manual or guide for general use in such situations.

## 1.2 Pakistan’s 2005 Earthquake

On October 8, 2005, at 8:50 a.m. local time, a magnitude Mw = 7.6 earthquake struck the Himalayan region of northern Pakistan and Kashmir. The earthquake epicentre was located approximately 9 km north northeast of the city of Muzaffarabad, the capital of the Pakistani administered part of Kashmir, known as Azad Jammu Kashmir (AJK). The Pakistani government’s official death toll as of November 2005 stood at 87,350, although it is estimated that the death toll could reach over 100,000. Approximately 38,000 were injured and over 3.5 million rendered homeless. According to government figures, 19,000 children died in the earthquake, most of them in widespread collapses of school buildings. The earthquake affected more than 500,000 families. In addition, approximately 250,000 farm animals died due to collapse of stone barns, and more than 500,000 large animals required immediate shelter from the harsh winter. It is estimated that more than 780,000 buildings were either destroyed or damaged beyond repair, and many more were rendered unusable for extended periods of time. Out of these, approximately 7,000 school buildings and most major hospitals close to the epicentre were destroyed or severely damaged. Lifelines were adversely affected, especially the numerous vital roads and highways that were closed by landslides and bridge failures. Several areas remained cut off via land routes even three months after the main event. Power, water supply, and telecommunication services were down for varying lengths of time, although in most areas services were restored within a few weeks.

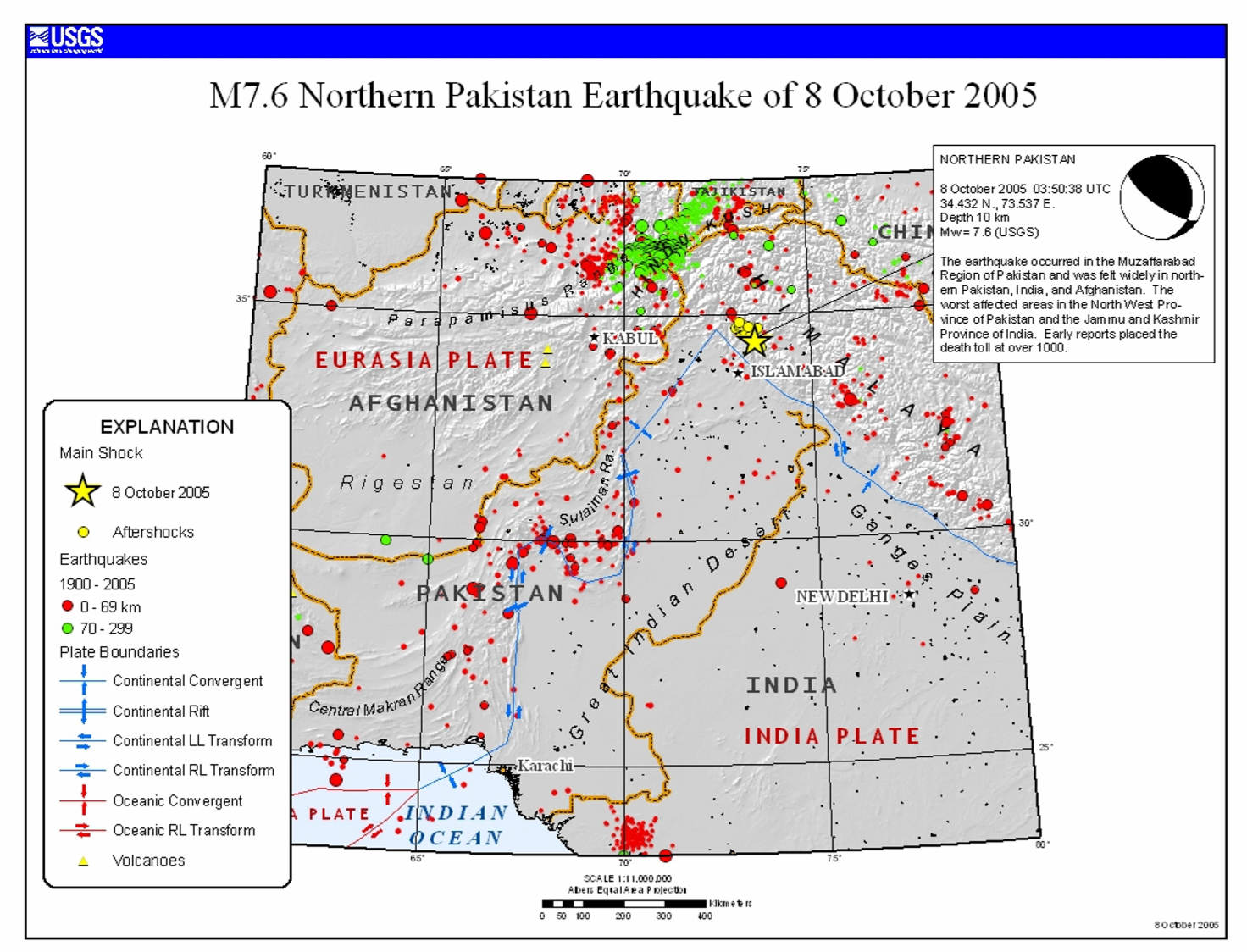


Figure 1 : General location map, Mw = 7.6 Kashmir Earthquake

## 1.3 Disaster Impact Model

A disaster occurs when an extreme event exceeds a community’s ability to cope with that event. Understanding the process by which natural disasters produce community impacts is important for four reasons:

First, to identify the pre impact conditions that make communities vulnerable to disaster impacts,

Second, to identify specific segments of each community that will be affected disproportionately (e.g., low income HHs, ethnic minorities, or specific types of businesses),

Third, to identify the event-specific conditions that determine the level of disaster impact, & fourth, the understanding of disaster impact process allows planners to identify suitable emergency management interventions.

The pre-impact conditions act together with event-specific conditions to produce a disaster’s physical and social impacts. These disaster impacts can be reduced by emergency management interventions. The process by which disasters produce community impacts can be explained in terms of models proposed by Cutter (1996), and Lindell and Prater (2003). Specifically, the diagram indicates the effects of a disaster are determined by three pre impact conditions hazard exposure, physical vulnerability, and social vulnerability. There also are three event-specific conditions, hazard event characteristics, improvised disaster responses, and improvised disaster recovery. Two of the event-specific conditions, hazard event characteristics and improvised disaster responses, combine with the pre impact conditions to produce a disaster’s physical impacts. The physical impacts, in turn, combine with improvised disaster recovery to produce the disaster’s social impacts. Communities can be engaged in three types of emergency management interventions to ameliorate disaster impacts. Physical impacts can be reduced by hazard mitigation practices and emergency preparedness practices, whereas social impacts can be reduced by recovery preparedness practices.

**Emergency management interventions**

Emergency

Preparedness

Practices

Hazard

Mitigation

Practices

Recovery

Preparedness

Practices

**Pre-impact conditions**

Hazard exposure

Social vulnerability

Physical vulnerability

Improvised Disaster

Recovery

Hazard

Event

Characteristics

Improvised disaster response

**Event-specific conditions**

**Social impacts**

**Physical impacts**

**Figure 2: Disaster impact model ( Cutter (1996), and Lindell and Prater (2003)**

## 1.4 Social Impacts of Disaster

Social impacts, which include psychosocial, socio-demographic, impacts on health sector, housing and non-monetary services, can develop over a long period of time and can be difficult to assess when they occur. Despite the difficulty in measuring these social impacts, it is nonetheless important to monitor them because they can cause significant problems for the long-term functioning of specific types of households and businesses in an affected community. A better understanding of disasters’ social impacts can provide a basis for pre impact prediction and the development of contingency plans to prevent adverse consequences from occurring.

### 1.4.1 Psychosocial Impacts

One type of social impact not measured by census data consists of psychosocial impacts and, indeed, research reviews conducted over a period of 25 years have concluded that disasters can cause a wide range of negative psychosocial responses (Perry and Lindell 1990; Bolin 1985; Houts et al. 1988; Gerrity and Flynn 1997). These include psychophysiological effects such as fatigue, gastrointestinal upset, and tics, as well as cognitive signs such as confusion, impaired concentration, and attention deficits. Psychosocial impacts include emotional signs such as anxiety, depression, and grief, as well as behavioural effects such as sleep and appetite changes, ritualistic behaviour, and substance abuse. In most cases, the effects that are observed are mild and transitory. The result of ‘‘normal people, responding normally, to a very abnormal situation’’ (Gerrity and Flynn 1997, p. 108). Few disaster victims require psychiatric diagnosis and most benefit more from a ‘‘crisis counselling’’ orientation than from a ‘‘mental health treatment’’ orientation, especially if their normal social support networks of friends, relatives, neighbours, and co-workers remain largely intact. However, there are population segments that require special attention and active outreach. These include children, frail elderly, and people with pre-existing mental illness, racial and ethnic minorities, and families of those who have died in the disaster. Emergency workers also need special attention because they often work long hours without rest, have witnessed horrific sights, and are members of organizations in which discussion of emotional issues may be regarded as a sign of weakness (Rubin 1991).

The negative psychosocial impacts described above, which Lazarus and Folkman 1984 call ‘‘emotion-focused coping’’ responses, generally disrupt the social functioning of only a very small portion of the victim population. Instead, the majority of disaster victims engage in adaptive ‘‘problem-focused coping’’ activities to save their own lives and those of their closest associates. Further, there is an increased incidence in prosaicall behaviours such as donating material aid and a decreased incidence of antisocial behaviours such as crime (Mileti et al. 1975; Drabek 1986; Siegel et al. 1999).

There also are psychosocial impacts with long-term adaptive consequences, such as changes in risk perception, beliefs in the likelihood of the occurrence of a disaster and its personal consequences for the individuals. And increased hazard intrusiveness frequency of thought, discussion, and information received about a hazard. In turn, these beliefs can affect risk area residents’ adoption of household hazard adjustments that reduce their vulnerability to future disasters. However, these cognitive impacts of disaster experience do not appear to be large in aggregate, resulting in modest effects on household hazard adjustment. (Lindell and Perry 2000).

### 1.4.2 Socio-Demographic Impacts

The most significant socio-demographic impact of a disaster on a stricken community is the destruction of households’ dwellings. Such an event initiates what can be a very long process of disaster recovery for some population segments. According to Quarantelli 1982, People typically pass through four stages of housing recovery following a disaster. The first stage is emergency shelter, which consists of unplanned and spontaneously sought locations that are intended only to provide protection from the elements. The next step is temporary shelter, which includes food preparation and sleeping facilities that usually are sought from friends and relatives or are found in commercial lodging, although ‘‘mass care’’ facilities in school gymnasiums or church auditoriums are acceptable as a last resort. The third step is temporary housing, which allows victims to re-establish household routines in non-preferred locations or structures. The last step is permanent housing, which establishes household routines in preferred locations and structures. Households vary in the progression and duration of each type of housing and the transition from one stage to another can be delayed unpredictably. Particularly significant are the problems faced by lower income households, which tend to be headed disproportionately by females and racial/ethnic minorities.Such households are more likely to experience destruction of their homes because of pre impact locational vulnerability (Rubin et al. 1985).

### 1.4.3 Impacts on Health Sector

After any disaster health sector becomes very vulnerable for lack of food and pure-drinking water and so on. Different water-borne diseases like acute diarrhoea, typhoid, various skin diseases, hepatitis etc. often spread out in the affected areas. It is mentionable that still many village people drink water from ponds, rivers and lakes. Again many people depend on rainwater, especially for agriculture. They preserve it in the rainy season and use it in the summer or hot seasons. But natural disasters pollute that water. “Contamination of safe water sources creates scarcity of safe water for drinking, washing and bathing. Unsafe drinking water often causes them suffer from different diseases. But the situation deteriorates immediately after any natural disasters, because that water cannot be drunk any more for saline and the contamination of dead bodies like cattle and human beings. There are not enough tube-wells so that rural people can drink safe water. On the other hand, poor sanitation system is also responsible to deteriorate the situation. Usually rural sanitation facilities are very poor. Any natural disasters make the situations worse (Peacock, 1987).

### 1.4.4 Impacts on Housing Sector

The way households operate offers insight into their response to crises and their effects; it also increases knowledge about the impact of relief and reconstruction initiatives, in terms of access to resources, the roles and responsibilities of individuals in their households, and changes in each person’s degree of well-being. Reconstruction initiatives may also impact on support systems and social norms. In addition, all such actions may have an effect on perceptions of one’s own contribution to the household, and therefore open up the possibility of changes, whether positive or negative, in the status of women (Bradshaw et al., 2001). One of the models that facilitates understanding of how households operate is that of “cooperative-conflict”, formulated by Sen (1987; 1990), in which negotiation plays a central role. This author contends that the members of a household seek to improve both their own situation and the collective “well-being” of the household, and establish different priorities for this. Resolving these differences is a function of each member’s ability to bargain. The factors that have a bearing on bargaining ability or position are each member’s self-perception with respect to his or her worth as a person and the perception of worth that other people in the household confer on him or her. Both, in turn, depend on the value placed on each member’s contribution to the household’s wellbeing, which often translates into the quantity of resources e.g., income that can be obtained. Women are generally in a weaker bargaining position than men because their contribution is invisible, is not recognized or is considered less worthy, which affects their self-esteem.

## 1.5 Problem statement

Natural disaster brings more devastation in a developing countries like Pakistan and has the potential to bring different impacts like social, Psychosocial and physical impacts. Social impacts often results in the disruption of social fabric, poor reproductive health, insecurity, lack of shelter and housing, distress, injuries and loss of employment. Therefore, this study connects the personal and collective social impacts to ensure the impact of disasters upon individuals and communities as a whole.

## 1.6 Objectives of the study

The aim of this study is to provide a systematic understanding of the social impact of 2005 earthquake on the communities in Balakot.

* To examine health and housing conditions of communities after earthquake.
* To assess the socio-demographic condition of respondents in the study area.
* To generate policy relevant recommendations for the betterment of the society.

## 1.7 Significance of research

Unfortunately, there has been relatively little research on the topic of the social impacts of severe earthquakes by sociologists. Except man-made disasters, Pakistan has faced its first ever-natural disaster with significant human and economic losses. Neither the state nor the citizens ever expected such grave circumstances nor such heavy causalities.

Since this is not the first or the last disaster in this country, there is a need of emergency preparedness and response for all types of disasters to cope with the impacts of disaster in the long run. This requires a new planning approach and extensive applied research on the topic that may help to channel and interlink the state machinery, households, private sector organizations, and international support agencies in a well-coordinated manner for post disaster management activities. Since 2005 many studies have been conducted on the assessment of economic losses in terms of monetary value but very few studies have been conducted on the social implications at community level. The results of this study will help in formulating the measures to cope the effects of earthquake. Final outcome will bring out new ideas and possible recommendations.

## 1.8 Organization of the study

The study has been organized into five chapters. Chapter 1 is about introducing the subject of study, provides the theoretical framework, highlighting problem statement and spells out the significance of the study. Chaptesr 2 provides the literature review. Chapter 3 describes the study area including methodology of the study. Chapter 4 describes the data and results of the study. While chapter 5 includes the conclusion and recommendations.

# CHAPTER 2

# REVIEW OF LITERATURE

Disaster events impact both developed and developing countries, in the latter, they can cause a sharp increase in poverty. As disasters pose an important challenge to the development and it is important to assess their global, regional, economic, and social impacts. Most economic assessments of the impacts of disasters have concentrated on direct losses—that is, the financial cost of physical damage. Equally important are indirect and secondary impacts of disasters, including the destruction of communities and their negative impacts on communities, individuals and families. The challenges posed by potential disasters in the developing countries like Pakistan require rapid action, and also an energetic risk-management strategy. To help reduce those negative impacts, countries need an overall evaluation of their risks, including: (i) risk identification, (ii) risk reduction, and (iii) risk transfer. It is expected that concerted action on risk management will help create an increased awareness of the economy—wide significance of natural disasters and the problems they pose for long—term development. Accordingly, this growing awareness will lead to an increased resilience in the developing countries. To better understand the social impacts it is important for a country to carry out the social impact assessment which provides the information about the impacts on overall social fabric with particular reference to the poor and marginalized sections of population. This assessment findings will form the basis for the Continuous Social Impact Assessment, which will assess the social impacts of different interventions and programmes initiated by Government and different agencies on a regular basis to ensure maximum benefits for the target population.

## 2.1 Effects of disaster on the community

Disasters disrupt communities in many ways, including disruption to normal routines, physical harm and social disruption. In short, disasters are unexpected events and it is essential that the affected community is identified so that the needs of these groups of people can begin to be identified and then addressed. There are many definitions of community, a community can be considered as a social, religious, occupational, or other group sharing common characteristics or interests and perceived or perceiving itself as distinct in some respect from the larger society within which it exists. When identifying disaster affected communities or parts of a community, it is also important not to be restrictive in how affected communities are defined. Caution needs to be exercised so that the process does not alienate people who, although not appearing to be obviously affected, may be experiencing consequences from the disaster. These people may include those who have witnessed an event, helped others affected, become distressed by hearing information about the emergency or felt they were at potential risk of the emergency (even if that risk did not eventuate).

Within the social environment, the impacts of a disaster usually result in losses and/or disruptions to peoples’ lives both individually and in terms of the social infrastructure. Each disaster is unique, varying along dimensions such as predictability, speed of onset, duration, degree of damage and so on. As a general rule, unpredictability, rapid onset, long duration and severe damage are likely to be associated with greater adjustment difficulties for individuals and communities. Regardless of the disaster dimensions, loss of life, loss of shelter, injury, trauma and threats to safety (many of which may continue while the recovery operation is underway) all impact on community recovery

## 2.2 Effects on the natural environment

The effects of disaster on the natural environment that impact on the community may be a result of the disaster or they may be a secondary impact or flow on from the disaster response or recovery process. Examples include air quality, water quality, land degradation and contamination, bio-security, sense of place issues and impacts on the natural environment (State Government of Victoria 2010). Disasters may impact on all aspects of a community. The degree to which sustainable community recovery can be achieved depends on the disaster and on existing community and individual resilience and vulnerability. In creating a heightened awareness of the risks communities face, disasters afford communities the opportunity to adapt and reduce their exposure to potential future risks.

## 2.3 Housing and shelter conditions after 2005 earthquake, Pakistan

In order to reduce the social impacts of the disasters it is necessary to reduce the physical impacts of disasters because physical impacts produces the social impacts in the long run. Physical impacts of the disasters can be reduced through proper structural mitigation. The earthquake left an estimated 2.8 million people in need of shelter at the onset of a harsh winter, in a rural, difficult to access terrain. It is estimated that in October 2005 about 787,000 housing units were in the affected area, and that these were predominantly rural. According to the initial joint assessment by the World Bank and the ADB, 203,579 housing units were destroyed and 196,575 units were damaged. Some 84 percent of the total housing stock was damaged or destroyed in AJK, while 36 percent in KPK. However, these figures have grown in view of severe aftershocks and increased access to remote areas after the initial survey. Ninety percent of the destroyed or damaged housing is found in rural areas (EERI special earthquake report). Even when houses are damaged, loss of housing functionality may be difficult if there is massive disruption of infrastructure. In such cases, tent cities are necessary if undamaged housing is beyond the range of community e.g. Mass relocation has been attempted in the past, but it is usually undesirable because it creates social and psychological disruption and delays physical reconstruction and economic recovery.

## 2.4 Health conditions after 2005 earthquake in the affected areas of Pakistan

According to a report by Asian development bank and World Bank. The earthquake’s impact on the health sector includes severe damage to health infrastructure and health systems. About 574 health facilities were partially damaged or destroyed. Furthermore, were 21 confirmed deaths and 141 injuries sustained to staff, with incomplete information regarding the Lady Health Workers (LHW) residing among the affected communities. Many surviving staff members in the earthquake affected areas are away from work due in part to psychological trauma and to their assistance to family members in finding shelter and rebuilding houses. Moreover, health management was paralyzed at the central level in Mansehra and AJK, district, and at the facility level. These losses have resulted in a complete breakdown of the health system and a total disruption of both secondary and primary care service provision. Based on available information, the total damage to the health sector is estimated at approximately Rs. 7.1 billion. This figure does not include the cost of damage to private health care system and indirect losses due to expenditure on treatment of survivors, public health interventions, loss of health staff and the impact of psychological trauma, which have not been computed.

## 2.5 Effects of Disaster on social environment

It is important to understand the consequences of a disaster upon the social infrastructure because effective social recovery is the foundation for enabling the progression of recovery in all aspects of the community (including the economic, natural and built environments). In addition to the impacts of the disaster event, the response and the recovery effort (planning, management and service delivery) itself has potential to create negative social consequences for affected individuals and communities. These are discussed as secondary effects. Positive consequences can be enhanced and negative ones avoided, or at least alleviated by an effective recovery effort and the sound coordination of response and recovery. Other secondary impacts also briefly considered include the consequences of responding to emergency events on those within the community who help (such as the disaster workforce and volunteers).

It is clear that establishment of context in evaluating the degree of severity of impacts is of paramount importance. As risk analysis is essentially based on the possibility of a given event occurring and the degree of severity of resulting consequences, it is evident that the local socio-economic context must be assigned a determining role in the evaluation of the risk. (Kortenhaus e kaiser, 2009; Topuz et al., 2011).

To reduce the long-term impacts of disasters, affected countries must take such actions along parallel tracks. First, as an essential part of their economic and social development strategy, they should allocate financial resources for the prevention and mitigation of the foreseeable impact of a disaster. Such an assurance should be understood as a high-yield investment –in economic, social and political terms for achieving long-term growth. Second, once a disaster has occurred, they must ensure that reconstruction investments reduces the vulnerability with an adequate level of sustainable growth.

Disasters are natural phenomena, but their impacts are not. Rather, their impacts are the result of the human actions and are determined by the circumstances of the country i.e., poverty, social inequalities and among other factors. Blaikie et al. (1994:3) point out that there is a risk inherent in treating disasters as something unusual or as events detached from people’s daily lives.

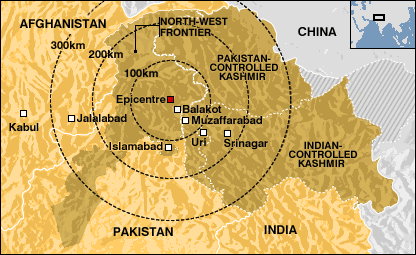
Watts and Bohle (1993), Blaikie et al. (1994), argue that people's vulnerability to natural hazards is determined not so much by the event itself, but rather is a function of social conditions and historical circumstances. Thus, protection from the social forces that create inequitable exposure to risk becomes just as important, if not more so, than protection from natural hazards.

# CHAPTER 3

# RESAERCH METHODOLOGY

## 3.1 Study area

Balakot is a town in Mansehra District in the Khyber-Pakhtunkhwa province of Pakistan. The town was destroyed during the 2005 Kashmir Earthquake, but was later rebuilt with the assistance of the Government of Pakistan and international humanitarian agencies. Total population of Balakot is 214,630 (District Mansehra finance and planning department, 2013). During the 2005 earthquake the entire town was destroyed. According to NWFP Government official site 80% of the buildings were destroyed and the death toll reached to almost 87,350. The United Arab Emirates volunteered to rebuild this town into an improved one with housing colonies, schools, hospitals, and other civic facilities. However the Pakistan government has announced that the city will be relocated. The town is reconstructed about 20 km away at a safer spot with more earthquake-proof buildings. The hillside town of Balakot, comprising 12 union councils with a population of 30,000 people, was completely destroyed by the earthquake on October 8, 2005. Over 90 per cent of the houses were reduced to muddy smears. The survivors will be relocated to the New Balakot City, currently being developed near Mansehra.



**(Source: Wikipedia) Location map of balakot**

## 3.2 Geographical features

Balakot sub division is like wedge driven up between Azad Kashmir on the East and Kohistan District in West and North respectively. Crow-fight distance from South. West to the North East in 100 Km and by road from Batrasi Forest to Babusar top is 188 Km, within an average width of 25 KM. (Source: Wikipedia)

## 3.3 Administration

Balakot Tehsil consists of 16 Union Councils. (Source: Wikipedia)

* Atter Shisha
* Balakot
* Garhi Habibullah
* Garlat
* Ghanool
* Hangrai
* Kaghan
* Karnol
* Kewai
* Labar Kot
* Mahandri
* Pairan
* Sandaisar
* Satbani
* Shohal Mazullah
* Talhata

## 3.4 Research Design

**Community**

**Locality/neighbor hood**

**Family or household**

**Individual**

**Men**

**Women**

**Youth**

**Children**

**Source: Self made**

**Figure 3: Assessed Impact of Earthquake on different Entities**

Understanding the impact of disasters upon the collective social environment recognizes that human beings do not function separately but within an array of social relationships with interdependence. Equally, each individual’s unique strengths and weaknesses (or risk and protective factors) will influence their recovery. Therefore, this study connects the personal and collective social impacts to ensure the focus is on the impact of disasters upon communities as a whole.

## 3.5 Target population

The target population were the residents of Balakot and specifically the people effected by earthquake 2005. Eighty respondents has been selected for the study from the main city of Balakot. The respondents selected were those who directly or indirectly were affected by the 2005 earthquake and were still in processes of rehabilitating themselves after ten years of the earthquake.

## 3.6 Sampling technique

In order to select the respondent’s simple random sampling technique is used. In this technique, each member of the population had an equal chance of being selected as subject. The entire process of sampling was done in a single step with each subject selected independently of the other members of the population. Because Random sampling eliminates biasness by giving all individuals an equal chance to be chosen. An unbiased random selection and a representative sample is important in drawing conclusions from the results of a study.

## 3.7 Data collection

Data for this study is gathered through primary sources, using survey questionnaires, face to face interviews were conducted from the respondents. As Gray (2004) identified the importance of these tools and found them a powerful way to bring the information from the respondents.

Main variables in primary data are socio-demographic includes (age, gender, marital status, occupation etc.) and social indicators such as health, housing and non-monetary services etc.

A pre-test is applied to examine and verify the questionnaire before putting into operation. This helped to minimize the errors and to restructure the questionnaire. 5-8 questionnaires are pretested.

## 3.8 Data analysis and reporting

Data is presented in the form of tabulation and graphically. The data is transformed into proper tabulation using Excel. Results has been gathered through percentages and averages. Likert scale is also used in order to get the response of respondents. After the analysis of data results are incorporated and further recommendation are made.

## 3.9 Reliability and Validity of Research

The principles of reliability and validity are important parts of the scientific method. When we talk about reliability we mean consistency or repeatability of results. Validity of a study means that the study is capable to measure for which it has been designed. According to Patton (2001), validity and reliability are two factors, which any qualitative researcher should be concerned about while designing a study, analyzing results and judging the quality of the study. However the credibility in quantitative research depends upon the instrument construction while in qualitative research the researcher is the instrument (Patton, 2001, p. 14). Hence validity of the research is referring towards the researcher abilities in collecting and analyzing the data. The concept of a good quality research when reliability is a concept, evaluate quality in quantitative study with a “purpose of explaining” while quality concept in qualitative study has the purpose of “generating understanding” (Stenbacka, 2001, p. 551).To ensure reliability in qualitative research, examination of trustworthiness is essential (Seale, 1999).

In the present study care has been taken to ensure reliability and validity by giving a detailed account of all the processes involved in the research. To acquire valid, reliable multiple and diverse realities, multiple methods of search or gathering data are in order. Engaging multiple methods, such as, personal observation, and interviews lead to more valid, reliable and diverse construction of realities. The study has constructed the reality and by engaging all such methods in collecting and analyzing the data.

## 3.10 How Biases were removed in the Study

It is not possible to conduct a completely unbiased research but what one can do to ensure accuracy of a study is to clearly become aware of one’s own biases. In this study, the researcher took certain measures to deal with his own biases. For instance, simple and clear questions were asked from the respondents rather than making them complicated to understand. If the respondents were unable to understand the questions, they were made simpler at the moment. Moreover, the questions were kept neutral to reduce question bias and question order bias was also reduced. For instance, general questions were asked before specific questions.

## 3.11 Ethical Consideration

The research ethics in the researcher-respondent relationship were followed, which was the need of the research. The researcher made sure and kept in view all the ethical issues regarding research. Researcher made sure that research was not biased. Confidentiality was ensured. The purpose of the study was clearly explained to the respondent, because it is the right of respondent to maintain privacy. All those questions which could possibly harm respondents were ignored or asked in a different way for the sake of their comfort

# CHAPTER 4

# RESULTS AND DISCUSSIONS

**Introduction**

This study provides an overview of the social implications of earthquake on the health, housing and nonmonetary services in the Balakot.

**Table 1: Socio-demographic variables**

|  |  |
| --- | --- |
| **Demographic variable** | **Mean values** |
| Age of household | 39 |
| Average no of earners in the household | 5 |
| Average education (years) | 10 |
| Average family members (No.) | 5 |
| Average no of male | 3 |
| Average no of female | 2 |

**Source: Author field survey, 2015**

## 4.1 Source of income

Study showed that the 28.7% of the people in the area are dependent on farming, as farming has much importance on a smaller scale. Family farming provides local foods to the community when there is surplus produced, and it provides for much of the family's food consumption otherwise. This allows the family to save money and reduces dependence on industrial farming and 17.5% of the people said that they are Self-employed (Shopkeepers). 5% of the people were mason. 3.7% of the people were dependent on the livestock. 1.2% of the people were pensioners. 8.7% were private employee, 8.7% government employee, 6.2% of the people were generating their livelihood through handicraft making, 2.5% were dependent on petty trade, 12.5% of the people were having their own business and 5 % of the people were labour.

**Source: Author field survey, 2015**

**Figure 4: Showing source of income of the respondents**

## 4.2 Housing infrastructure information

Total no of respondents were 80. Study shows that 68.7% of the people were having their own houses before the earthquake but after the earthquake due to the damages occurred to their houses only 31.2% of the people were having their own houses. Due to the damage to the houses 10% of the people who were receiving rent from their extra houses they lost their income which they mostly uses for the education of their children. 48.7% of the houses were partially damaged while 51.2% of the houses were completely damaged due to which peoples were unwillingly living in tents and temporary shelters. When we asked them about the social linkages in the society and their response In their community after the earthquake for the effective social recovery 37.5% of the people said that their response was co-operative, 12.5% said responsive 26.25 communal and 23.7 said that they have shared response in the recovery phase whish shows that the social linkages between the community was strong and if the social linkages between the communities are strong then it reduces the social vulnerability of the people to the disasters.18.7% of the people helped in reconstruction and rehabilitation of the community through their contributing their money. 12.5% offered the laboured services and 68.7% of the people motivated others in the reconstruction and rehabilitation phase. These figure shows that instead of relying on the external aid local community itself contributed their part for the reconstruction and rehabilitation.

**Table 2: Table showing housing infrastructure information**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SECTION HOUSING (SHELTER)** |  | **before** | **%age** | **After** | **%age** |
|  |  | **Earthquake** | | **earthquake** | |
| Do you have /had your own house? |  | 55 | 68.75 | 25 | 31.25 |
| Extra house from which you receives rent |  | 8 | 10 | 4 | 5 |
| Effects of earthquake 2005 on your house |  |  |  |  |  |
| 1 | Partially | 39 | 48.75 |  |  |
|  | damaged |  |  |  |  |
| 2 | Fully Damaged | 41 | 51.25 |  |  |
| Your response in the neighbourhood after | |  |  |  |  |
| the disaster |  |  |  |  |  |
| 1 | Co-operative | 30 | 37.5 |  |  |
| 2 | Responsive | 10 | 12.5 |  |  |
| 3 | Communal | 21 | 26.25 |  |  |
| 4 | Shared | 19 | 23.75 |  |  |
| Your efforts you made in reconstruction |  |  |  |  |  |
| and rehabilitation in terms of |  |  |  |  |  |
| 1 | Money | 15 | 18.75 |  |  |
| 2 | Labour | 10 | 12.5 |  |  |
| 3 | Motivating | 55 | 68.75 |  |
|  | people etc. |  |  |  |  |

**Source: Author field survey, 2015**

## 4.3 Health conditions

Better health is essential to human happiness and well-being. It also makes an important role to economic progress, as healthy populations live longer, are more productive, and can save more. Many factors influence health status and a country's ability to provide quality health services for its people. Ministries of health government departments, donor organizations, civil society groups and communities play important role in the provision of health facilities to the people in the normal conditions as well as in disastrous situation.

This study showed that people faced many diseases after the earthquake due to the lack of medicines and other health facilities, 16% of the people were having the respiratory diseases, 12% were suffering from the skin diseases, and 3.7% with measles**,** 1.2% with eye infection and 3.7% were having the malaria. Medical relief camps were established and then 66.2% of the people were treated and the rest 33.7% did the home medication. After the disaster people faced many difficulties in accessing the health facilities, the main reasons were the low income and poor infrastructure. 38.7% of the people are deprived from the health facilities due to the lack of income. Low income individuals will be less likely to recover from the material and health impacts of disasters. These individuals are less likely to have insurance to cover disaster losses, they may be on fixed or very limited incomes, they may struggle repaying low-interest disaster loans. Health conditions existing before disaster will likely be exacerbated by disaster, and lack of disposable income will make it very difficult for these low-income populations to afford health and mental health care and 26.2% of the people living in the remote areas faced difficulties to access the health facilities due to bad road conditions. The earthquake has damaged the health infrastructure and up till now there are no proper health facilities available in the area. Mostly people living in the remote areas due to poor road infrastructure do not have the health facilities in time of emergencies due to which most of the patients die on the way before reaching to the hospitals. Study also shows that the most effected group were the children. The earthquake had severe psychosocial impacts on the children. Due to the widespread collapses of school buildings many children died others injured and many suffered from the trauma, shock and psychological impacts.

**Table 3: Health conditions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Health** |  |  |  | **frequency** | **%age** |
| No of the children, aged or old in your Household suffered | | |  |  |  |
| from following diseases after earthquake |  |  |  |  |  |
|  |  |  |  |  |  |
| 1 | Respiratory infections | |  | 13 | 16.25 |
|  | (Cough, flu, pneumonia etc.) | | |  |  |
| 2 | Skin diseases |  |  | 1 | 1.25 |
| 3 | Diarrhoea |  |  | 0 | 0 |
| 4 | Measles |  |  | 3 | 3.75 |
| 5 | Eye infections |  |  | 1 | 1.25 |
|  |  |  |  |  |  |
| 6 | Malaria/dengue | |  | 3 | 3.75 |
| Kind of difficulties faced by women, old and disabled | |  |  |  |  |
| members to access/go the nearest health facility? | |  |  |  |  |
| 1 | transport |  |  | 8 | 10 |
| 2 | income |  |  | 31 | 38.75 |
| 3 | Access |  |  | 12 | 15 |
| 4 | road condition |  |  | 21 | 26.25 |
| 5 | social hindrances | |  | 8 | 10 |
|  |  | |  |  |  |
| How you treated diarrhoea |  |  |  |  |  |
| 1 | to see a doctor | |  | 53 | 66.25 |
| 2 | home medication | |  | 27 | 33.75 |
| Most effected group |  |  |  |  |  |
| 1 | children |  |  | 41 | 51.25 |
| 2 | Adults |  |  | 8 | 10 |
| 3 | Aged |  |  | 11 | 13.75 |
| 4 | women |  |  | 20 | 25 |
| Most frequent communicable diseases |  |  |  |  |  |
| 1 | measles |  |  | 10 | 12.5 |
| 2 | skin diseases |  |  | 2 | 2.5 |
| 3 | dirrh0ea |  |  | 23 | 28.75 |
| 4 | acute respiratory disease | |  | 3 | 3.75 |
| 5 | don’t know |  |  | 42 | 52.5 |

**Source: Author field survey, 2015**

## 4.4 Non-monetary Services

**Table 4: Monetary Services Information**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Non-monetary services** | **Before earthquake** | | | | **After earthquake** | | | |
| **Yes** | **%age** | **No** | **%age** | **Yes** | **%age** | **No** | **%age** |
| Community organizations | 17 | 21.25 | 63 | 78.75 | 30 | 37.5 | 50 | 62.5 |
| former organizations | 21 | 26.25 | 59 | 73.75 | 28 | 35 | 52 | 65 |
| former training organizations | 4 | 5 | 76 | 95 | 11 | 13.75 | 69 | 86.25 |
| credit facilities | 45 | 56.25 | 35 | 43.75 | 31 | 38.75 | 49 | 61.25 |

**Source: Author field survey, 2015**.

As the earthquake brought many social impacts which the community struggled to survive while on the other hand as the result of foreign aid the no of non-monetary services increases in the affected area with the help of international organizations. 21.2% of the people responded that there were few community organizations in the area while before the earthquake and 37.5% responded said that the no of community organizations increased after the earthquake. Similarly 26.25% of the respondent said that there were less no of organizations before the earthquake as compared to after the earthquake. The no farmers training organizations were also increased as well. However the credit facilities which are considered as important for running small businesses and which helps farmers to improve their production became low 56.2% of the people said that were having the access to the credit facilities before the earthquake while after the earthquake only 38.75% of the people said that they have the access to the credit facilities

## 4.5 Satisfaction level of the community towards health facilities

**Source: Author field survey, 2015**

**Figure 5: Showing the satisfaction level of community:**

Figure 5 is showing the satisfaction level of people toward the health facilities provided by the government. The provision of health facilities after any disaster is the primary responsibility of any government. When asked from the people about the health facilities in the area 34% of the people said that that they are strongly unsatisfied by the health facilities provided by the government while only 9% of the people were satisfied by the facilities provide by government.

# CHAPTER 5

# CONCLUSION AND RECOMENDATIONS

## 5.1 Conclusion

After the earthquake 2005 the people of Balakot faced many social implications in health and housing sector, however the monetary services sector has improved a bit by the interventions of INGO’S.

In the housing sector most of the people are still living in temporary shelters. The government promised to shift the people of Balakot to the Bakraiyal city but now after ten years of earthquake, no significant steps has been taken to recover the losses of the people. Most of the people still has not got the money which the government promised to give them for the reconstruction of their houses.

The health sector was also destroyed in the earthquake 2005. Peoples faced many diseases due to the secondary effects of earthquake. Emergency medical camps provided the necessary treatment to all the effectives. But after the rehabilitation phase when these medical camps were taken off government didn’t take any interest in providing the health facilities to the people there is only one government hospital in the area which also lack the necessary equipment’s, medicines and doctors. Patients in serious conditions lost their lives due to the lack of life saving drugs and most of the times they are advised to go to other cities for the treatment which they cannot afford.

The monetary services sector has shown some improvements. Community organizations and the farmer training organizations increased after the earthquake with the help of NGO’s. This improvement has provided the local farmers to enhance their skills in the field of production to increase their output. The increases no of community organizations has made the people easy to resolve their issues by consenting with each other.

## 5.2 Recommendations

To create an awareness of the complexity of the disaster’s social impacts it is necessary to impart awareness at all levels.

Community should have the strong social linkages, with the different social classes of the societies for building the strong social linkages between the community members, while it is been discussed that social linkages between the community plays an important role in determining the extent of impacts of disaster.

Planners and the government must focus on the structural and non-structural measures for reducing the physical impacts of earthquake like building codes etc., because social impacts are created due to the physical impacts in the long run, if these physical impacts are avoided then social impacts can be reduced.

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