Socio-Economic Impacts Of Earthquake In Ziarat District Of Balochistan

By: Nadia, Dr.Mumtaz A. Baloch, Shumaila Umer
M.Phil scholar, department of social work, Uninversity of Balochistan
Supervisor and chairperson deparrment of social work, UoB, Quetta
Assistant professor, department of sociology, SBKWU, Quetta

ABSTRACT:

Pakistan is one of those countries, that is vulnerable to different serious types of natural disasters such as earthquakes, floods, and drought. . The earthquake not only causes deaths, physical disabilities but it also damage to the infrastructure and cause economic loss. It causes long-lasting mental health impacts on individuals. The aim of the study is to identify the impact of the devastating earthquake of 2008 on the socio-economic aspects of district Ziarat, Balochistan. To examine the socio-economic impacts of the earthquake, primary and secondary data were collected through different sources. Results showed that 2008 Ziarat's earthquake caused tremendous damage and loss. This catastrophic earthquake was followed by hundreds of aftershocks. Consequently, it jolted the communities of Ziarat. Government of Balochistan should provide pre-disaster strategies to save infrastructure and the lives of people. Government needs to stimulate stakeholders to participate to the reconstruction of government offices, schools and colleges, and damaged houses to enhance the socio-economic conditions of the effects. Apart from this, the government must devise a holistic strategy to implement the building codes so that the region should remain safe when a disaster hits the region in the future. Last but not least, the federal and provincial government require to come up with an effective policy to reconstruct the abolished houses and buildings in district Ziarat. In the meantime, the earthquake victims need to be rehabilitated physically and psychologically. In this regard, both the government and non-governmental organizations can intervene the communities based on research findings.

Keywords: Earthquake; Socio-economic impacts; Ziarat, Balochistan

Introduction

Earthquake is considered one of the most furious and devastating natural phenomena which cause immense destruction. Earthquake affects almost every part of the Earth and likes rains Earthquake can be either mild or catastrophic. Over the years natural processes such as earthquakes, floods, and other natural events have shaped the surface of our planet. An earthquake may last only a few seconds, but the processes that cause earthquakes have operated within the Earth for millions and millions of years. Until very recently, the cause of earthquakes was an enigma. It was the subject of fanciful folklore and equally fanciful learned speculation by peoples throughout the world (Muir, 1872).

Earthquake produces enormous demolition to infrastructure and can create other possibility of hazards of Tsunami if an ocean is present in that area (Mingxin, et al, 2008). In addition, 2010 Earthquake of Haiti created significant impacts which includes 200,000 deaths and destroyed 250,000 residing places and 30,000 commercial buildings (Green and Rebekah, 2011). Furthermore, the Northern Pakistan Earthquake of Kashmir region in 2005 brought a huge apprehension to lives with 70,000 death and left 80,000 people injured. The massive earthquake of 7.7 left two million people homeless which is considered to be the worst natural disaster in the history of Pakistan (Durani, *et al.*, 2005).

An earthquake is a natural phenomenon, like rain. It causes a large number of economic and social difficulties. However, such destructive events occur unpredictably as it is caused by a sudden slip from the earth's crust which causes the shake of earth and causes huge harm to the population (Heidarzadeh & Satake, 2014).

There are three main types of fault, all of which may cause an interpolate earthquake: normal, reverse (thrust) and strike-slip (McConnell, 2010). Normal and reverse faulting are examples of dip-slip,

where the displacement along the fault is in the direction of dip and movement on them involves a vertical component. Normal faults occur mainly in areas where the crust is being extended such as a divergent boundary. Reverse faults occur in areas where the crust is being shortened such as at a convergent boundary. Strike-slip faults are steep structures where the two sides of the fault slip horizontally past each other; transform boundaries are a particular type of strike-slip fault.

Earthquakes are vibrations in the Earth's crust that cause shaking at the surface. They are highly unpredictable and often occur suddenly without warning. As yet, we have no way of fully and accurately predicting when an earthquake will occur. Earthquakes are common events on the Earth, with around 50,000 occurring every year around the globe, mainly on the plate margins (coolgeography.co.uk).

Since 1970, the world has seen around 7000 major disasters that killed at least 2.5 million people and caused a loss of $2 trillion and broadly affected societies, In addition, 75% of the world population experienced natural Catastrophe at least once a year between1980 to 2000. Experts maintain that the economic losses and frequency of natural disasters are increasing day by day. From 1960 to 2007, based on a sample of 184 causes, natural cataclysm caused a huge loss of 742 billion US dollars in 2007 (constant value). Total losses in this period were around $360 to $678 billion (Okuyma *et al.*, 2007).

In the last 30 years, around 400,000 deaths and 1 million earthquake-related injuries have been reported which affected around 61.5 million people worldwide. It is likely most of the losses went unreported and real losses might be far greater. However, it is apparent that in the underdeveloped areas damages of the earthquake would be higher as compared to developed regions. Given the development status of Asia, the impacts of earthquakes are staggering. Most of the deaths caused by an earthquake because of the collapse of buildings which lead to soft tissue injuries and fractures.

Furthermore, those who live in the dilapidated shelters are more prone to death; children and old people being the real victims (Doocy *et al., 2005l*).

The earthquake of Nepal expenditure touched the number of US $7 billion in 2015 which included the values of physical infrastructure and loss of opportunity. The earthquake caused the destruction of 491,620 buildings and 269,653 received partial damage. In addition, the earthquake also affected the school and health infrastructure. Furthermore, the earthquake also produced 3.9 million tonnes of debris which the country can produce waste in 11 years. However, Rs.220,000 per family was granted to three thousand affected families by the government for the reconstruction of their houses (Tasneem, 2015).

The earthquake of Nepal expenditure touched the number of US $7 billion in 2015, which included the values of physical infrastructure and loss of opportunity. The earthquake caused the destruction of 491,620 buildings and 269,653 received partial damage. In addition, the earthquake also affected the school and health infrastructure. Furthermore, the earthquake also produced 3.9 million tonnes of debris which the country can produce waste in 11 years (Dr. Gopal M and Upadhyay, 2015).

The October 8 Earthquake of Azad Kashmir caused huge destruction to Government, private, public and academic institution infrastructure, around 7,669 schools received damage which included primary, middle and higher educational institutions. According to damage assessment around Rs. 19.9 billion of loss was caused due to the destruction of the public and another library (Shaheen, 2008) (UNOCHA and Humanitarian clusters, 2013).

Previous studies show that Earthquakes result in serious damage to the socio-economic situation of the country. An earthquake produces enormous demolition to infrastructure and can create another possibility of hazards of Tsunami if an ocean is present in that area (Xin, *et al*, 2008). In addition, the 2010 Earthquake of Haiti created significant impacts which include 200,000 deaths and destroyed 250,000 residing places and 30,000

commercial buildings (Green and Miles, 2011). Furthermore, the Northern Pakistan Earthquake of Kashmir region in 2005 brought a huge apprehension to lives with 70,000 death and left 80,000 people injured. The massive earthquake of 7.7 left two million people homeless which is considered to be the worst natural disaster in the history of Pakistan (Durani *et al*, 2005).

Data Sources

Two types of data were used in this study, including secondary data (earthquake-induced damage records) and primary data (Focus Group Discussion).

Secondary data; Socioeconomic statistic data (national GDP and consumer price index (CPI) data) were collected from the National Bureau of Statistics of Pakistan. Records of earthquake-induced damage in 2008 in Balochistan particularly in the district of Ziarat, were collected from the reports of The National Disaster Management Authority and published books as well as online and relevant references.

Authorties of PDMA were interviewed. Focus Group Discussion was conducted with affected families in district Ziarat.

Results and Discussion

According to the secondary sources, the 28 October 2008 earthquake 6.4 on the Richter scale in Baluchistan caused a gigantic demolition in Zairat and Pashin districts and some parts of Zhob and Quetta district. According to The National Disaster Management Authority (NDMA) reports 155 people died and 375 people became injured, however, the death ratio about media reports is 300 in affected areas (WHO, 2008). In addition, 130,000 people in the Ziarat district and 14 villages in Kawas and Kach union council (35,000 people) were badly affected. Further, in Pashin district 456,619 people were affected.

The findings of the study showed that the 7.7 magnitude earthquake of 2008 in Ziarat district affected the people socially, economically and psychologically. Mostly the households were living in a joint family and 39% of them were illiterate. Due to the earthquake male and female members got some serious injuries and disabilities. On the other hand, 16% of males and 19% of females died due to earthquake and the major reason for death was the poor infrastructure of their houses. The disaster compelled the households' members to migrate from affected areas from the fear of aftershocks and for getting better facilities.

This paper presents a cross directorate report on the economic, budgetary and unborn policy implications of earthquakes. The report traces the factors underlying Zairat's vulnerability to earthquake damage along a known active fault. This has put a great impact on the economy of Pakistan (Khairy *et al.*, 2013).

Two Union Councils badly affected around 150 persons lost their lives due to the unrelenting earthquake majority of the victims were females and children. In this aspect, most of the government buildings, hospitals, mosques, roads were destroyed in Ziarat due to the earthquake. Further fourteen (14) villages (partially and totally) destroyed due to the 2008 earthquake. In addition, two thousand (2,000) houses were damaged. The livelihood options of the households were badly affected. In Ziarat district, 70,000 people have been affected, while 2,000 houses and 128 schools have been damaged. Many roads are impassable, health care centers have been destroyed, and food and water supplies are at risk. Hence, five hundred houses were collapsed around Ziarat.

Ninety-eight (98) percent of educational institutions in Ziarat were destroyed due to the earthquake aftermath. However, around one hundred fifty (150) primary, middle and high schools have been damaged due to an earthquake in Ziarat. While 155 people were dead due to the earthquake around 375 individuals had received injured because of the earthquake. Whereas approximately 70,000 individuals were adequately affected, in this

regard, 12000 people were displaced from their places and locations. Due to the earthquake thirty-eight (38) health facilities, 8 BHUs, and 4 civil dispensaries were damaged in Ziarat district Balochistan, 2008. But the ratio of migration in the respective districts did not record or document so for.

Table-1 Damage profile of human consequences in earthquake areas

District	Completely destroyed	Partially Destroyed	Total houses damaged	Population affected (%)
Harnai	278	370	648	6,549 (10%)
Pishin	956	2,294	3,250	27,021 (40%)
Ziarat	**2,254**	**1,460**	**3,714**	**34,630 (51%)**
Total	3,487	4,125	7,612	68,200 (100%)

The NDMA reports that 7,000 to 10,000 individuals have been displaced, with 1,500-2,000 houses destroyed. A local NGO, Balochistan Rural Support Programme (BRSP), reports that up to 70,000 individuals had been affected and that just over 10,000 houses had been damaged.

Recurring aftershocks have prompted some people to move to safer places. The remaining population is living in tents or partially damaged houses. The McRAM survey indicates that 96.2% of affected households have remained on their own property, with 2.1% staying with host families and the remaining 1.7% staying in communal centers, schools or camps.

With temperatures already very low in the high altitude region and likely to get lower as winter approaches, the UN inter-agency assessment determined that the urgent needs of the most affected populations include winterized tents, blankets, and warm clothing, food, provision of health services and restoration of local drinking water supplies.

Focus group discussion revealed the fact that–Health indicators in Balochistan were already poor, and the earthquake has significantly increased pressure on healthcare providers in the affected area. Unless prompt action is taken to meet the emerging health needs of the affected population, there is a strong likelihood of outbreaks of communicable diseases, which are already prevalent in the area. Incidents of Acute Respiratory Infection (ARI) are already showing an upward trend due to the severe weather and poor shelter conditions. There is therefore also a pressing need for interventions in the health sector.

The respondents also highlighted the after-effects of the earthquake on important aspects of life, they experienced. The water source of the households was affected after by the earthquake which caused water scarcity and some well dried up. After the earthquake, the people helped one another by providing food, temporary shelters and as well as support financially. The earthquake affected the working condition, educational infrastructure, health facilities, and transportation, in the surrounding affected areas. The result showed that mobile played a vital role in getting information and rescue operations in the area. After the earthquake, mostly the affected people lived in tents and built huts for their temporary shelter.

On the other hand, the earthquake affected the household's members psychologically because they had never experienced such a disaster in their area before. As a result, the earthquake affected the children, adults, old age and women. The affected people feel insecure, frightened and we're scared of aftershocks. The earthquake caused depression, stress, insomnia, and phobia.

Following questions were put before the authority of Provincial Disaster Management Authority (PDMA) Balochistan.

Q1: What were the major reasons of causalities after Earthquake in Ziarat District?

Ans: The causalities reported were approximately two hundred (200) and more than 250 injuries were reported. There were numerous factors of causalities after Earthquake in Ziarat district. Some of the major reasons were:

1- Unsafe housing
2- Poor concrete
3- Mud houses
4- Land slides
5- Steep terrain houses

Q2: What were the reasons of social loss (Migration and Education)?

Ans: After the earthquake most of the people migrated on temporary basis and lived in camps. They migrated because they thought that another earthquake was unlikely to occur again. Moreover, poverty was also a factor for migration. Most of the people migrated to Quetta and Karachi in search of livelihood. Poor infrastructure of houses was also a causal factor for forced migration. Education system was badly affected by earthquake in Ziarat District. The Earthquake destroyed approximately 95% of the educational institutions in District Ziarat. The use of low quality materials and poor construction were responsible for the breakdown of educational institutions. Children couldn't go to schools which had bad impact on education in Ziarat.

Q3: What emergency services have you provided after the earthquake in Ziarat District?

Ans: The Provincial Disaster Management Authority (PDMA) immediately started relief activities after the deadly earthquake in Ziarat District. PDMA sent Medical/Rescue teams with ambulances to earthquake affected areas. Furthermore, PDMA provided 1500 blankets, 1000 tents, water and food to

Ziarat. PDMA also provided financial support to earthquake victims, 5 lac each to the families of those who lost their lives and 1 lac 50 thousand each for injured persons.

Q4: What facilities and services PDMA could not provide; and the reasons?

Ans: PDMA provided almost all the facilities and services (medical, food and shelter).

Q5: How many trained people/officials do you have to deal with emergency circumstances after the earthquake stricken?

Ans: There are total 17 people/officials to deal with emergency circumstances. PDMA is planning to recruit trained people for Rescue 1122 project to deal with emergency situations.

Q6: How/whether you have reconstructed houses in Ziarat District?

Ans: PDMA reconstructed damaged houses of Ziarat. Earthquake proof shelters were constructed in Ziarat District. The earthquake proof shelters were designed by the Engineers/Experts of PDMA.

Q7: What are the "Potential" and "Challenges" of PDMA?

Ans: PDMA is working in 12 districts of Balochistan, providing all facilities of relief effectively. There are many challenges for PDMA in provision of emergency services.

There are no offices of PMDA in other districts of Balochistan except Quetta. The emergency services of PDMA are carried out under the chairmanship of Deputy Commissioners of Districts. There is dire need to establish offices of PDMA in all Districts of Balochistan. The biggest challenge faced by PDMA is lack of rescue staff, unfortunately there is extreme shortage of rescues teams, equipment and relief kits to deal with multi disasters like Drought, Earthquake, flood, cyclone and Tsunami.

Q8: What are missing equipment/items to intervene the affected people/households?

Ans: PDMA Quetta office is having all equipment/items to intervene the affected people/households. There are no equipment/items in other districts of Balochistan to deal with affected people/households and there is need of well-trained rescue teams in all districts to deal with emergency circumstances.

The results showed that the earthquake also had serious impressions on the economic condition of the people of Ziarat. In District Ziarat the sources of income were labor source; agricultural lands, government service, and small business. The earthquake affected the people economically because of the loss of their assets and affected the irrigation water. Before the earthquake mostly houses were Kacha and many houses razed to the ground due to earthquakes. In addition, some of the households lost their animals due to damages to the animal's walls. The affected people borrowed money, received assistance and sold their assets in order to bring back their lives on track.

Further, the results showed that people also lost their valuable things such as televisions, refrigerators, bikes, and cars. The governmental organization provided assistance to the affected people and the household's members also received funds for the reconstruction of their houses but the finding showed. 23% of households did not receive funds for reconstruction after the earthquake. The assistance was received in the shape of food, blankets, and tents but 28.5% of households did not receive blankets and 11.5% did not receive tents for shelter. 84% of households complained that the aide was not enough to meet their basic necessities so they were forced to borrow money, worked as a laborer. Fortunately, their neighbors extended a helping hand when the dark clouds were hovering in those gloomy days.

Conclusion

Earthquakes are considered the most furious and devastating natural phenomena that cause immense destruction. Earthquakes affect almost every part of the Earth and like rains, Earthquakes can be either mild or catastrophic. The 28 October 2008 earthquake 6.4 on Richter scale in Balochistan listed a gigantic demolition in Zairat and Pashin districts and some parts of Zhob and Quetta district. According to The National Disaster Management Authority (NDMA) reports 155 people died and 375 people became injured, however, the death ratio about media reports is 300 in affected areas. Ziarat is the least developed district of Pakistan in terms of basic amenities of life. The people of this district are deprived of fundamental rights. Even people lack two square meals in their daily diet let aside the quality education and peace in life. The 2008 disastrous earthquake added many miseries in their life without addressing the core issues. This study was carried out in order to bring the chilling realities before the common people of this district. After conducting this study, it is suggested that what is necessary to be offered to this hapless person of this district which is as under.

Recommendations

According to PDMA authority, there are total 17 people/officials to deal with emergency circumstances. This is a very meagre number when compared to the population and geographical of Balochistan. PDMA should technically train at least 1000 officals to effectively support the earthquake affected communities. Government of Balochistan must devise a holistic strategy to implement the building codes so that the region should remain safe when a disaster hits in the future. It is also the need of the hour to bring the disgruntled into the mainstream. Moreover, communication was dearly missed during the survey of this area like roads are in barren shape and no easy way was available to approach the city. Last but not least, the federal and provincial government should come up with an effective policy to reconstruct the abolished houses and buildings in district Ziarat. In the meantime, the earthquake victims need to be rehabilitated physically and

psychologically. In this regard, both the government and non-governmental organizations can intervene the communities based on research findings.

References

1. Durrani AJ, Elnashai AS, Hashash YMA, Kim SJ, Masud A (2005). The Kashmir Earthquake of October 8, 2005, A Quick look Report, Mid-America Earthquake Center, the University of Illinois at Urbana-Champaign, CD Release 05-04, December

2. Khairy A E A, Rafi Z, Ahmed N, Rehman UR S, Azeem T (2013) Analysis of Quetta-Ziarat earthquake of 29 October 2008 in Pakistan. 1National Seismic Monitoring Center, Pakistan Meteorological Department, Islamabad. 2National Research Institute of Astronomy and Geophysics, Helwan, Cairo, Egypt.

3. Loya A R (2008), Post Earthquake visit, Loya Associates Consulting Engineers and Project Planner, Karachi.

4. Manafpour A. R (2003). The Bam, Iran Earthquake, Field Investigation Report, Halcrow Group Limited.

5. Mingxinlui, li wang, Zhanbiaoshi, Zhen zhang, Kanzhang and Jianhuashen (2011). Mental health problem among children one-year after the Sichuan earthquake in china: A follow up study.

6. Rafi Z, Ahmed N, and Rehman-Ur-S. (2009). Seismotectonic Analysis of Ziarat, Balochistan Earthquake of 29th OCT, 2008, Issued by Director General, Pakistan Meteorological Department, Islamabad, Technical Report No. PMD-32/2009.

7. Rebekah paci-green and Scott.Miles (2011). Social impacts of 12 January 2010 Haiti Earthquake

8. Shaheen MA (2008). Earthquake effects on educational institutions and libraries of Azad Kashmir: an appraisal, American Information Resource Center, US Embassy, Islamabad, Pakistan.

9. The World Bank and International University of Japan

10. UNOCHA and Humanitarian clusters (2013). Balochistan earthquake 2013 finding strategies.

11. Wang X and Liu K (January 2012) Earthquake and Mental Health, The Mental Health Institute of Hebei Medical University, Shijiazhuang, China.

12. WHO (2008). Earthquake in Baluchistan Pakistan, Ministry of Health, Situation Report No 3.