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Forced Migration and Natural Disasters: A case Study from Ziarat Earthquake

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Abstract

Global environmental change is current issue prevailing across the globe. Similarly Pakistan generally & Balochistan particularly is facing great climatic changes resulted force migration in different areas due to certain environmental issues. Keeping the importance of said climatic changes, a study was designed to evaluate and assess the reasons of migration induced by earthquake in District Ziarat, with the basic objective of highlighting reasons for forced migration from the native areas of district Ziarat. 90 households were selected using purposive sampling technique. Results revealed that the basic reason of migration was because of aftershocks of earthquake in the effected union councils of district Ziarat. 81.82 % migrated just after the earthquake shocks in their area while 12.12 % households migrated from the native area in 2009 just after one year of earthquake. 3.03 %, 1.53 % and 1.52 % households migrated respectively in 2010, 2012 and 2013 due to the same reason. Results were obtained that out of 90 respondents 73.5 % migrated within the province and shifted to provincial capital Quetta. 15.5 % were migrated to another province of the country like Punjab and now residing in Multan city. While another 11 % migrated to another provincial headquarter namely Karachi. All the migrated respondents migrated to the urban centers of different provinces of the country and showed the trends of migration from rural to urban. It was evident from the results that out of 90 respondents in district Ziarat 32 % were having muddy structure home/houses and 35.5 %. 17 respondents were having semi muddy home/house with 19 % and 30 % with cemented home/houses, and 12 % respondents were living in semi cemented houses. 28 % respondents were living in 3 rooms' house. 21.00 % respondents having were living in 2 room's house. 17 % respondents were living in 4 room's house. 9 % respondents were living in 1 room house. 8% respondents were living in 5 rooms' house. 5 % respondents were living in 6 room house and 7 % respondent were living in 7rooms house, 4 % respondent were living in 9 rooms houses and 1 % migrated population living in 10 room house. Results showed that 50 % respondents migrated due to the threat of earthquake in their native areas, 28 % migrated in search of livelihood, 18 % respondents migrated due to the poor infrastructure of their houses, and 4 % migrated due to other reasons. Results showed that 77 % of respondents were agreed that their new destination were more vulnerable in regard to natural disaster than the native place and 23 % respondents were on the view that their new destination is more resilient then native place.

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1.1 Introduction

Ziarat valley is known for its unique flora like Juniper, apple and cherries in the province of Balochistan having admirable taste and juicy fruits with cold environment in summer. Ziarat is blessed with unique landscaping having mountainous areas with small pockets being used for agriculture purpose. The local inhabitants are living in rural areas with very little population and nominal necessities and facilities of life. Landholdings are very small and the natural landscape has been entirely damaged by the local inhabitants for two reasons like construction of houses & leveling of land for agriculture purposes. Similarly the range lands are also destroyed due to haphazard grazing & nomadic movement in the area concerned. The source of irrigation in district Ziarat is streams, fountains, Karezes, dames & tube wells. The rural communities of the district are mostly dependent on agriculture and livestock is the second largest source of rural livelihood in district Ziarat. Similarly some individuals are doing their jobs in line departments within the district started from Union council Kach to Union council Baghave at sanjavi covering waste area of the district.

Global change is an environmental, cultural & political phenomenon which is reshaping the way people think about themselves, their societies and their earthly future. Climate change is therefore a major instance when scientific knowledge symbolic imagination interact in multiple and complex ways. Every individual has own thoughts and imaginations about climate change. People think about climate change in the context of science, economics, religion, psychology, Risk communication, development sociology and politics. (Mike Hulme, 2015).

Scholars predict that climate change will degrade the environment considerably during this century, ceteris paribus (IPCC, 2007a, 2007b). What are the implications of the this prediction for human migration and violent conflict, defined as arrange of activities, including, for example, threats, beating, appropriation, insurgency, skirmishes & interstate or interstate wars. Gleditsch, Nordas and Salehyan (2007) observe the climate change – induced migration appears in many climate change - to – violence scenarios. They argue that whether these scenarios will materialize depends on the scope of degradation and the extent it influences migration decisions, calling for more research in this area. Recognizing that the effects of climate change are not yet fully manifested & the strong believe could gain insight by exploring past effects on migration induced by environmental problems of the type climate change in expected to cause, and effects this migration had on conflict. This migration is termed as “Environmental Migration”.

It has been observed that people could adapt to environmental problems in three ways: stay in Place and do nothing, accepting the costs; stay in place & migrate changes; or leave affected areas. The choice between these options depends on the extent of the problems and migration capabilities. Developed countries (DCs) are likely to mitigate problems through technologies innovation and institutional redesign. Less developed countries (LCDs) are less likely to mitigate such problems since they lack wealth

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&expertise. Facing several environmental problems, people in LCDs may have to leave affected areas, which in turn, may cause conflict in receiving areas due to several reasons. Several environmental problems play a role in causing migration, which, at times, leads to conflict in receiving areas (Rafael Reuveny, 2009).

Migration as response to natural hazards, the impacts of natural hazards on society are substantial and clearly on the rise (Abramovitz, 2001). Indeed, estimates suggest that between 1/5 and 1/4 of the Earths human population was affected by natural hazards during 1970s and 1980s (Abramovitz, 2001). Even so, impacts are expected to increase during the period1972-1995, actual calamities increased by 5-7 % per year, while the damage resultant of these disasters increased by 5-10 % per year. Predictions of 2030 suggest a continuation of these trends in addition to their enhancement (Kondratyev, Krapivin and Phillips, 2001). Environmental change is resulting migration in many areas like in Bangladesh agriculture is very much dependent on annual flooding and the floods, therefore, take on unique cultural meaning. Although necessary, the persistent floods also change river courses, with many Bangladeshis loosing homes & lands to erosion annually. However, migration “short or long term” as a coping strategy is simply not feasible. Demonstrating the interaction between vulnerability and exposure to environmental hazards, in Peninsular Malaysia, structural factors restrict the residential of many inhabitants of risk prone regions. Household migration strategies as related to natural hazards are also seen in South America. On May, 31, 1970, a major earthquake struck Peru, killing as many as 70,000 residents and injuring 150,000 others. It is evident from the results that most migrants were compelled to seek employment through migration because the natural disaster is seen to have stimulated an ongoing process of modernization and acculturation with the areas concerned. (Kondratyev, Krapivin and Phillips, 2001).

Ziarat valley was severely affected by earthquake of 29th October, 2008 with magnitude of 6.5 & foreshock of magnitude 5.0 along with depths of events were 15 and 12 km respectively occurred near to chiltan hills of Baluchistan-Pakistan. The intensity of the main shock was VIII in and around the Ziarat-Pishin areas, while the Peak Ground acceleration recorded at Quetta area (60 KM from the epicenter) was 0.17 m/s2 (Horizontal component) and 0.06 m/s2 (Vertical component). The area like Ziarat is situated shallow events with depth of less than 15 KM are common in the region near Quetta area due to Chaman fault zone. The area is highly complicated in terms of stress regime, and accumulation of stress in local faults makes it even more complicated. The area has a history of seismicity with some devastating earthquake like in Quetta 1935 earthquake (M=7.7). As a result of earthquake of 29th October, 2008, a village namely Waam was completed destroyed while Ziarat city remained safe. Tehsil Khanozai was the second most affected area adjacent with Ziarat. (NDMA, 2012). Present study was designed to evaluate, assess & examine the factors and reasons of forced migration as a result of Earthquake & climate change occurred in Ziarat-Balochistan-Pakistan.

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1.2 Methodology

The nature of the research is exploratory to understand the reasons of forced migration that took place in Ziarat after the earthquake in 2008 in Balochistan. Data for the research concerned was collected in Ziarat valley from the most vulnerable and affected communities scattered and migrated to Multan, Quetta and other adjacent areas of the country. Both primary and secondary data was collected to fully cover the scope of the study. The primary data was further supported by observations made during the field work and over many years of interactions with the local inhabitants of Ziarat that was affected by earthquake and other natural disasters.

A household survey was conducted with a total number of 90 households, selected using purposive sampling technique. The questionnaire survey was followed by three Focus Group Discussions (FGDs) in the affected areas of the districts, Ziarat, Quetta and Multan. Respondents were asked about the reasons of migration from their native place whether they were intending to stay or to leave and for what reasons. The secondary data plays an important role in understanding the literature dynamics and the issue under study. Secondary data was collected through research articles, government reports, websites etc. the results are analyzed using statements and descriptive statistics.

1.3 Results and Discussions

The results section of the research article is focusing and emphasizing on basic reasons of the force migration from the native areas of district Ziarat. The data were collected, compiled, analyzed & presented both in tabulated & graphic forms. Such results and discussion are presented with certain detail. Data showed in Table -1 regarding year of migration from earthquake effected union councils of district Ziarat 90 respondents in which 81.82 % migrated just after the earthquake shocks in their area with the frequency of 54 households. 12.12 % households migrated from the native area in 2009 just after one year of earthquake. 3.03 %, 1.53 % and 1.52 % households migrated respectively in 2010, 2012 and 2013.These results are in conformity with Rafael Reuveny, 2009. The plausible reason for such force migration could be the non-availability of conducive & unfavorable enabling environment for the local inhabitants in their native areas of district Ziarat.

Data reflected in Table -2 concerning migration to the other migrated places. The data revealed that out of 90 respondents 73.5 % migrated within the province and shifted to provincial capital Quetta.14 respondents as 15.5 % were migrated to another province of the country like Punjab and now residing in Multan city. While another 11 % migrated to another provincial headquarter namely Karachi with the frequency of 10, all the migrated

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respondents migrated to the urban centers of different provinces of the country and showed the trends of migration from rural to urban. These results are in agreement with Zahid Rafi et al, 2011.The possible reason for such migration with a number of respondents could be the relations of local inhabitants with the local residents of Quetta, resemblance of cultural values, nearest area to the affected areas & availability of job opportunities.

Data reflected in Table-3, regarding migration in relation to the nature of home/house. The data revealed that out of 90 respondents in district Ziarat 32 were having muddy structure home/houses with 35.5 %. 17 respondent was having semi muddy home/house with 19 % and 33respondents were having cemented home/houses with 30 % and 11 respondents were living in semi cemented houses with the 12 %. These results are in line with NDMA, 2012. The probable reason of migration from the native affected areas of the district concerned could be muddy, Unsafe & insecure structure of houses.

Data noted in Table-4 regarding migration in relation to the availability of rooms in home/house. The data augmented that 28 % respondents with 25 frequencies were living in 3 rooms' house. 21.00 % respondents having 19 frequencies were living 2 rooms' house. 17 % respondents having 15 frequency were living in 4 room's house. 9 % respondents having 8 frequency were living in 1rooms house. 8 % respondents having 7frequency were living in 5 rooms' house. 5 % respondents having 5 frequency were living in 6 room house and 7 % respondent having 6 frequency were living in 7rooms house, 4 % respondent with the frequency 4 are living in 9 rooms houses and 1 % migrated population with 1frequency is living in 10 rooms house. These results are in agreement with Gleditsch, et al. 2007. The reason for such migration could be the maximum numbers of local inhabitants were living in very less number of rooms in the earthquake affected areas of district Ziarat. While the rooms concerned were badly affected by respective earthquake in district Ziarat.

Data showed in Table-5 regarding migration in relation to the reasons of migration from their native places. The data analyses showed that 50 % respondents with the frequency of 45 were migrated due to the threat of earthquake in their native areas, 28 % migrated in search of livelihood with 25 frequency, 18 % respondents were migrated from their areas with 16 frequency due to poor infrastructure of their houses, and 4 % have migrated with other reasons with 4 frequency. These results are in line with Colette Mortreux & Jon Barnett, 2009. The pivotal reason for certain migration from native areas could be the fear existed in the areas concerned in relation to earthquake along with poor infrastructure prevailing in the said areas.

Data reflected in Table-6 regarding migration in relation to the more vulnerable place from their native places. The data showed that 77 % of respondents were agree that their new destination were more vulnerable in regard to natural disaster than the native place with the frequency of 69 and 23 % respondents

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were on the view that their new destination is more resilient then native place with 21 frequency. These results are in conformity with Zahid Rafi et al, 2011. The plausible reason for such migration could be majority of the migrated community were with the opinion that migrated destination were more safe as compare to native place.

1.4 Conclusion

Environmental change is the alarming issue of all citizens of the city as well as rural areas in the world. Similarly, In Pakistan district Ziarat was also affected due to environmental change and earthquake in several union councils of the district concerned. The earthquake resulted force migration from certain native areas of Ziarat like waam, Warchom & Kawas. The pivotal reasons for such migration were poor infrastructure of their hoses made from mud and local stones. Some local inhabitants were migrated due to aftershocks caused from the said earthquake. Some inhabitants were migrated from the native places due to lack of residential facilities in the areas concerned. While some inhabitants were migrated from their native places as a result of lack of infrastructure provided by state after occurrence of earthquake in district Ziarat.

References

Abramovitz, Janet, 2001.Unnatural Disasters. World watch paper-158, World Watch Institute, Washington, D.C-USA

Ainuddin Syed and Jayant KumarRoutray. Institutional Framework, Key Stakeholders and community preparedness for earthquake induced disaster management in Balochistan (2012) Disaster Prevention and Management. Vol. 21. NO. 1. 2012 pp.22-36. Emerald Group Publishing Limited.

Aslan Zorlu, 2012, the impact of Migration: Natural Disaster. Department of Geography, Planning & international Development, University of Amsterdam-the Netherland.

Balochistan Provincial Disasters Management Authority, 2011.

Colette Mortreux, Jon Barnett, 2009. Change Migration and Adaptation in Funafuti, Tuvalu Global Environmental Change.19. pp. 105 – 112.

D. Guha – Sapir, d. Hargitt and P. Hoyois (2004) Thirty Years of Natural Disasters.1974-2003. The Numbers Centre for research on the Epidemiology of Disasters.

Gleditsch, N.P., Nordas, R., and Salehyan, I. (2007) Climate Change, migration and Conflict. New York, International Peace Academy. USA.

Himayatullah Khan and Abuturab Khan.12.October, 2008. Natural Hazards and Disaster management in Pakistan.

IPCC (2007a) Climate Change 2007: The Physical Science Basis. Geneva Intergovernmental Panel on Climate Change.

IPCC.(2007b). Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability: Geneva: Intergovernmental Panel on Climate Change.

International Organization for Migration (IOM). 2007. Migration, Development and Natural Disasters: Insights from the Indian Ocean Tsunami.

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International Organization for Migration Report-2009.

Kondratyev, Krill Ya, Vladimir F, Krapivin and Gary W. Phillips. 2001. Global Environmental Challenge: Modeling and Monitoring: Springer-Verlag: Berlin, Germany

Lori M. Hunter.2005. Migration and Environmental Hazards: Population and Environment. Vol: 26. No: 273-302.

Mike Hulme, 2015. Online lecture on Disaster Management. Professor of Geography, Kings College, London, UK.

NDMA, 2012. National Disasters Management Authority, Islamabad-Pakistan.

Nicoli Laframboise and Boileau Loko IMF working Paper External Relations Department, Western Hemisphere Department Natural Disasters: Mitigation Impact, Managing Risks Prepared Authorized for distribution by Kathryn Langdon October, 2012.

Rafael Reuveny, 2009. Climate Change – induced migration and violent conflict school of Public and Environmental Affairs, Indiana University, Bloomington, IN 47405, USA.

Zahid Rafi et al, 2011 Analysis of Quetta-Ziarat Earth quake of 29th October, 2008 in Pakistan.

Tables of the Results

Table # 1. Tabulated & Graphic illustration of year of Migration due to earthquake from Ziarat-Balochistan

Year of Migration	Percentage	Frequency
2008	81.82%	54
2009	12.12%	16
2010	3.03%	10
2012	1.52%	6
2013	1.52%	4
Total	100.00%	90

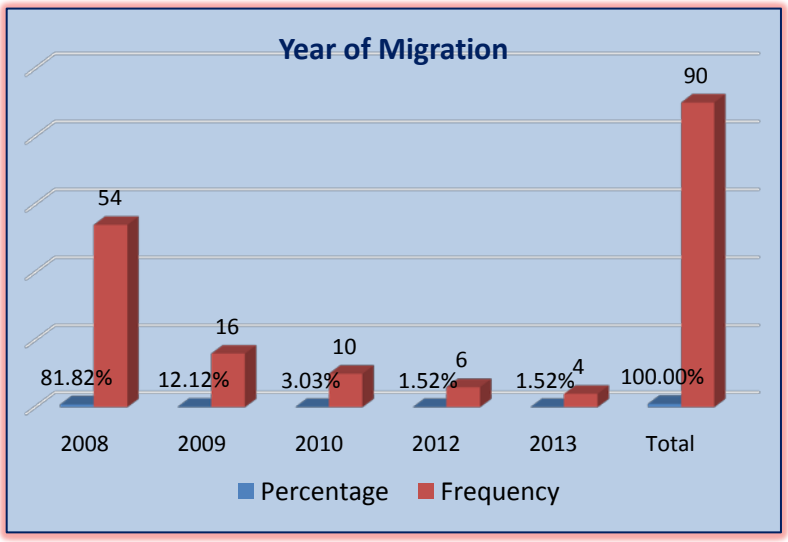

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Table # 2. Tabulated & Graphic illustration of the current destination of the inhabitants

Migrated	Percentage	Frequency
Quetta	73.5 %	66
Multan	15.5 %	14
Karachi	11 %	10
Total	100 %	90

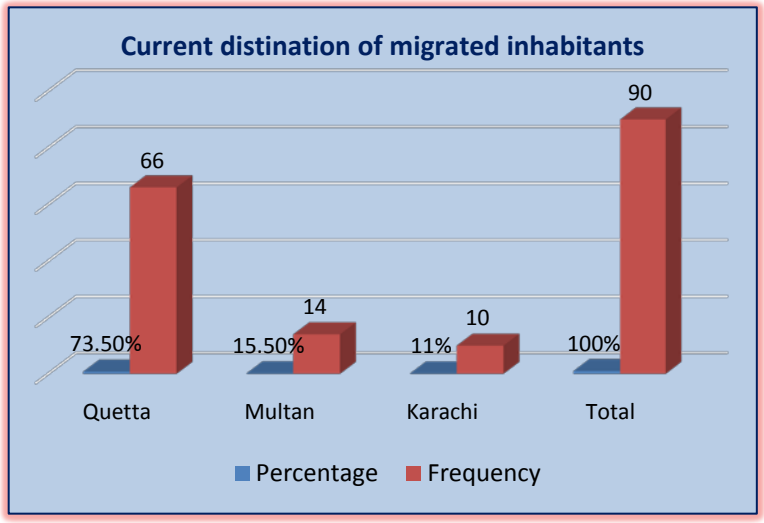

Table # 3. Tabulated & Graphic illustration of the nature of Houses in Ziarat

Nature of House	Percentage	Frequency
Muddy	35.5%	32
Cemented	33.5%	30
Semi Muddy	19%	17
Semi Cemented	12%	11
Total	100.00	90

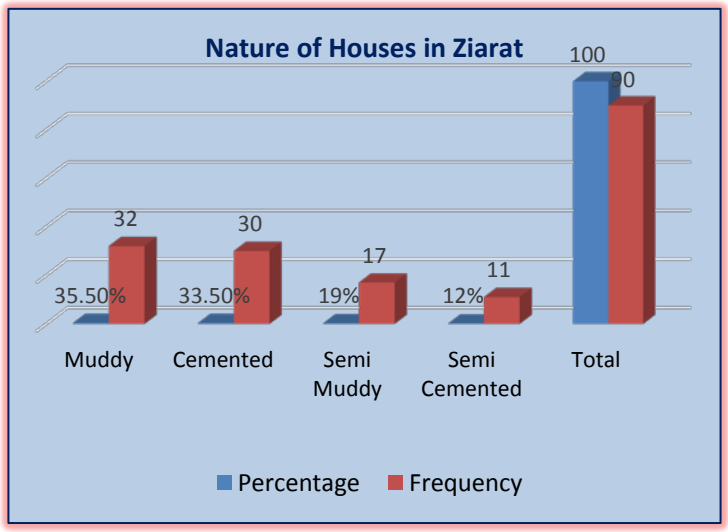

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Table # 4. Tabulated & graphic illustration of Number of rooms in earthquake affected areas in Ziarat.

No. of Rooms	Percentage	Frequency
1	9%	8
2	21%	19
3	28%	25
4	17%	15
5	8%	7
6	5%	5
7	7%	6
9	4%	4
12	1%	1
Total	100.00	90

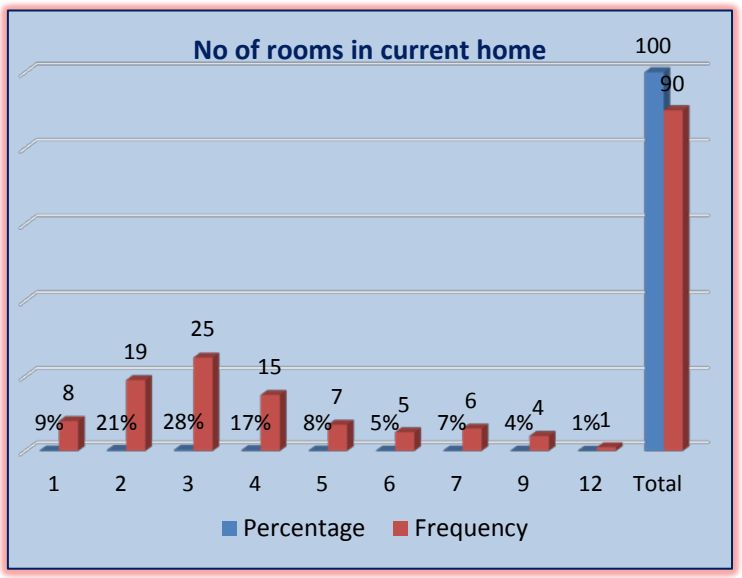

Table # 5: Tabulated & Graphic illustration of reasons of Migration from Earthquake affected areas of Ziarat.

Reasons	Percentage	Frequency
Poor Infrastructure	18%	16
In search of livelihood	28%	25
Threat of Earthquake	50%	45
Other	4%	4
Total	100%	90

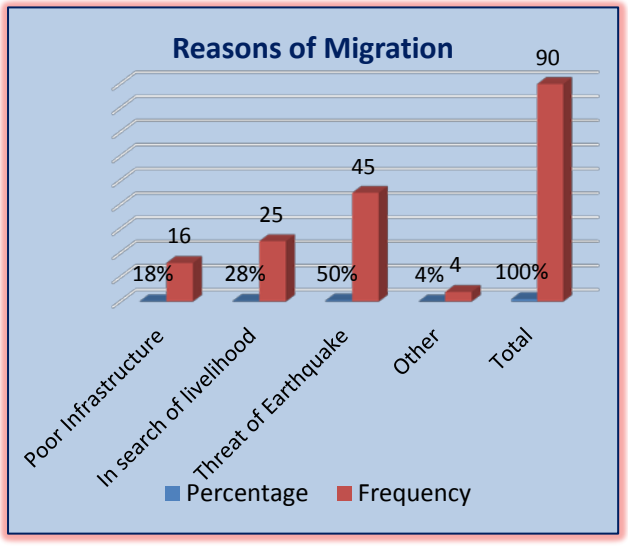

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Table # 6. Tabulated & Graphic illustration of more vulnerability of new destination to earthquake than Ziarat

Reasons	Percentage	Frequency
Yes	77	69
No	23	21
Total	100.00	90