

## Migration after natural disasters, case study: “the 2003 Bam earthquake”

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### Abstract

After Bam Earthquake in 2003, large amounts of aids and facilities were provided by government and NGOs for survivals but despite of this people migration took place in two ways, some migrated to cities around and some also came to the city that most of them changed into permanent residents. Chaos and disorder were severely influencing the reconstruction, recovery and development process and other aspects in Bam.

Experiences in developing countries show that migration for finding job and better economic conditions after disasters lead to some problems in basic services, for host societies. In developed countries such as Italy after the 2009 earthquake, migration occurred for cultural reasons and economic policies of government. A number of issues such as “Social Correlation”, psychology issues, government policies in recovery and reconstruction, economic conditions of society before and after the disasters were analyzed in this research. The methodology of this research is based on a qualitative approach. But quantitative analysis was done when required and data are available.

Research findings show migration of Bam was impressed by lack of consideration to economic rehabilitation, traumatic phenomenon after the disaster, social and identity subject, reconstruction methods and physical problems.

The feeling of non-identity and foreignness to city among its residents led to migrate some and only poor group to stay in Bam. In reconstruction time, strange workers found jobs in the city and settled there. Some of villagers around Bam also migrated to use facilities were available after the disaster that social, cultural- economic, physical and population subjects are the results.

*Keywords: Bam, earthquake, migration, natural disaster, reconstruction, recovery, social-economic structure.*



## 1 Introduction

It seems that after each big natural disaster such as earthquake, aftermath consequences can be as sever and great as the earthquake itself. These aftermath consequences can be classified as direct and indirect results. The direct ones can be seen as physical destruction after the named events. Population displacements from affected areas to outside and from outside towards them which can be seen as migration, would be classified as indirect results of natural disasters.

There are no global statistics on migratory movements prompted by natural disasters. At best, there are estimates and indications that can be derived from displacement data relating to particular crisis or other data on general trends (e.g. IOM [1]). Migration has always been one of the ways in which people have chosen to adapt to changing environments (e.g. IOM [1]).

But although migration rate following natural disasters is increasing and its effects became more destructive during recent decades, it seems that systematic attempts to reduce such effects by considering social science and conducting researches are fare from sufficiency. It also seems that government and local authorities' policies can reduce negative results.

This paper attempt to examine migration and people displacements followed the 2003 Earthquake in Bam, analyzing further developments and chains of effects. To do so, initial data on the events followed the earthquake were analyzed according to relevant theoretical frameworks and international experiences.

## 2 Data and material

After the 2003 Earthquake in Bam, people displacement as a big migration happened when survivors gradually found that remaining in their places without water and suitable shelter was too difficult to be bearable. At the recovery and reconstruction periods, some social as well as economic and psychological reasons were forcing some other survivors to leave the city to some more comfortable places. Even national and international helps could not change situations to be bearable for them.

On the other side, some outsiders were moving to Bam seeking job opportunities and share from the helps donated to the earthquake survivors. Significantly, labors with lower skills, especially at construction sector were coming to Bam in order to find job opportunities. High demand for labor of skills related to the reconstruction activities was attracting workers with lower skills to claim jobs with sufficient earnings. Additionally, some villagers from around Bam came at early to participate at the rescue operations or to help their relatives at the first weeks followed the earthquake, and then settled there. Many claimed being survivors of Bam in order to gain a share of the national and international helps. This was significant because a long drought season attacked the rural areas around Bam for many years, which caused rural people to become poorer than before. So, many of poor villagers immigrated to Bam claiming residency to benefit from the reconstruction program. Later, many people of Bam who lost



their spouses because of the earthquake, decided to marry people from nearby villages. These events ended in dramatic increase of the population of the town exceeding its population prior to the earthquake disaster, even it was reported that more than 34000 people died because of the earthquake. Now, most migrants turned to be permanent residents, which affected the native culture of the old Bam, increasing social disorders and chaos. These events were affecting the reconstruction program of Bam in a negative way which ended in lasting longer time and significant delay to aftermath recovery.

## 2.1 Theoretical works and international experiences

According to theoretical frameworks resulted from international works on immigrations followed disasters, indicate the following points:

- Both, natural disaster and migration/displacement are terms used to describe a wide range of environmental and social processes (e.g. IOM [1]);
- Vulnerability of place is negatively related to net migration—in other words, more socially vulnerable places will have incurred greater population loss (e.g. IOM [1]) and;
- Out-migration following natural disaster is a rational response for certain groups (e.g. IOM [1]).

Researchers show that out-migration after disaster can put impacts on the affected city that can remain for a long time. Influence can be affecting an affected city in its depth and include all its life aspects. This indicates that to study the aftermath migration, one has to consider many factors and study many relevant indicators and variables.

Younger people are more likely to leave the area. So in affected areas young skilled families with money and social networks migration, resulting in the abandoned communities becoming polarized between affluent property-owners, on one side, and an impoverished underclass, on the other (e.g. IOM [1]).

But ownership, land, house or business units can prevent people from migration. Poor or rich countries seem not to make differences in this matter. Both the developing and developed world shows that homeowners are less likely to migrate than non-homeowners. And it is worth mentioning that lower-income home-owners are more likely to report plans to return than higher-income home-owners, both of whom are more likely to return than renters.

From the economic point of view it is found that the evidence of the role of poverty in stimulating migration post disaster is surprisingly conflicting. Migration may not be an option for the poorest and most vulnerable groups. Furthermore, there are factors that may encourage people to stay; studies show that effective disaster relief and recovery programs in both the developing and developed world can serve as a brake on movement out. Economic factors play a decisive role in both the risk and response to natural disasters, where developing countries are most vulnerable due to lack of resources to prevent, respond and cope with their effects. Remittances play an important role in development and

post disaster recovery, thereby also contributing to adaptation (e.g. Mohapatra *et al.* [2]).

In New Orleans, people with low income did not leave their city, and for this reason, they were the main victims of the flood, losing life and small properties (e.g. Fussel *et al.* [3]). But on the other side, out-migration did not occur following the 2004 tornado in Bangladesh. The availability of aid, the effectiveness of distribution and the limited area affected all served to stem outflows. Notwithstanding arguments about aid discouraging self-sufficiency, the study shows how effective aid delivery can help people to successfully remain in affected areas (e.g. Bimal [4]).

So, to avoid such an event, well planned programs have to be implemented at rescue and recovery stages. This can be done both at developed and developing worlds. Survivors usually lose job opportunities as well as their properties at their homelands, therefore, they move to other places seeking job and any opportunity for situation recovery. Many prefer to stay at new places when they find any opportunity for a new job or a better life. Then, they usually ask their family members to accompany them, and not to return to their homeland. For those who stay at their disaster stricken areas, may suffer from problems that happen in disaster aftermath, mainly economic problems (e.g. IOM [1]).

In developing countries, migration of survivors usually happens by moving them toward safer areas. Many of these migrations occur because of cultural and social or financial reasons. In developed countries, governments can discourage post-disaster migration by giving economic incentives such as subsidies, low-interest loans and tax credits (e.g. Kolmannskog [5]).

A study done in Golden Stone, USA, after the 2003 tornado, the government discouraged local people from moving out of their homeland, using financial attractions as well as tax exemption, providing them with low-rate interest bank loans, and tax exemptions. Reports show that this policy was successful. But, at the Italian 2009 Earthquake case, affected people, even they lost their job because of earthquake disaster; they were forced to pay tax as if disaster would not occur. Significantly, most of survivors left their homeland towards nearby areas because of tax regulations.

Other social theory indicates that “social integration within a community will decrease the likelihood of disaster-event induced desire to migrate following a natural disaster”. In this regards, a theory states that: Community integration will provide networks and social support for those who experience disasters. Those without strong bonds may experience greater amounts of distress in the event of a disaster as compared to those who are well plugged in to community organizations (e.g. Research Proposal [6]).

A study project also indicates that after natural disasters, social integration became very crucial for the recovery stage. Those who are most likely to resist relocation tend to be those who have the strongest attachments to the community’s cultural roots (e.g. Research Proposal [6]). So we can conclude that after a disaster event, if affected people have relatives outside of the affected area, they may attempt to move there.

In migration analysis the key drivers are:



- (a) Factors related to the region or country of origin, including political instability and conflict, lack of economic opportunities, and lack of access to resources („push“ factors);
- (b) Factors related to the region or country of destination, including the availability of employment and demand for workers, higher wages, political stability or access to resources (“pull” factors);
- (c) Intervening factors that facilitate or restrict migration, including ease of transportation, family or social networks, government immigration or emigration policies, economic ties such as trade and investment linkages, or social and cultural exchanges (e.g.IOM [1]).

But at migration into a disaster stricken area, movements can take two forms: the entry of new migrants, whether they are seeking work in reconstruction or coming in to provide assistance and support to friends and relatives (e.g. IOM [1]). The disaster somehow acted as a catalyst, as opportunities were created for personal betterment. Population movements included an influx by the rural poor from areas that were not damaged by the earthquake to areas offering employment opportunities in the international programs on housing construction and the building boom in the aftermath of disaster.

So, one can see that disaster can provide new opportunities for poor people nearby to get shares from aids and resources donated for survivors. It was seen in Iran, as well as elsewhere that during reconstruction time, this phenomenon were increased and more poor people came to disaster stricken areas seeking benefits. For this reason, many researchers and planers deal with reconstruction and disaster management believe that disasters cause population movements, either directly or indirectly. However, previous experience shows that even where new migrants come with the intention of leaving, the longer the jobs last, the more likely they are to stay permanently.

## 2.2 Migration from Bam after the 2003 earthquake

Earthquake of 6.2 Richter happened in Bam, south of Iran, in December 26, 2003, resulted in sever destruction, claiming more than 34000 lives lost, and more others injured. The aftermath reconstruction program was implemented by the Iranian government and supported by 117 international as well as 36 national NGOs.

The earthquake event caused severe destruction for both people's properties and city infrastructure, due to deterioration of them. Damage affected the city water supply system caused cut of this system for a long time. Experiences of local people, officials and local NGOs in rescue management also was very insufficient and could not do the best works. The total image of the city at the first couple of days followed the event was very bad. Lack of water supply, electricity, and other urban infrastructures, caused most survivals and their families to leave Bam, seeking facilities for life in safer and suitable places.

This was the situation for the native people that caused them to migrate from Bam for short or longer times, many left for ever. This was the image of migration from Bam because of the earthquake. On the other side, there was another and very different image. The earthquake event was attracting different

types of people from around the country to come to Bam, offering different kinds of helps or rescue. Among those who came to Bam to help, many were coming for theft, collecting everything was left unattended in properties that were partially damaged by the earthquake and left without their owners. Gradually, when it became clear that many people were died, and many properties turned to be ownerless, many of the newcomers claimed ownership in Bam, and tried to stay there, abusing the chaos situations of severe damage and documents lost.

These newcomers who claimed ownership caused severe problems during the reconstruction time. In many cases, the native people were coming back to find their properties were occupied by outsiders who are claiming ownership. Many cases were taking to courts for investigation. This was causing delay in the reconstruction program.

There were other different caused for migration of native people from Bam and replacing them with outsiders. The process of preparing emergency and temporary shelters was problematic. During these periods, the Iranian government officials, assisted by some international and national NGOs, were distributing tents and some pre-fabricated temporary shelters between survivals. Many of the survivals preferred to put these shelters inside or just outside their damaged properties and live there for protecting their properties while doing their reconstruction jobs. But people who were living in Bam as tenants, and those who did not own houses, preferred to move to live in camps were provided by the government at the outskirt of the town. But keeping these camps run by the government was very expensive and people who were kept their needed all kinds of care, included feeding and healthcare.

But the main problem was attracting outsiders to come there, because they could get shelter and food free of charge. Building camps was easy job to do, as for this reason; more than 29 camps were established to accommodate thousands of the earthquake survivals. This large amount of camp capacities attracted poor as well as unemployed people to get shelter and food there. Some of the comers to the camps were of lay people with drug and other social disorder problems. This was increasing crime and drug rates swiftly, and affecting the Bam and its surrounding areas. These problems were severe when the government discovered the drug and crime increasing, and tried to demolish these camps, and to move people away. Resistance occurred by those people against the government wills which caused threat for government services' that faced attacks from the angry people.

Additionally, some reports were released from some local Reconstruction Offices expressed delay happened to the reconstruction process because many of those who were living in camps, were preferring remaining in camps to benefit from government generosity in proving them with shelter and food, than facing problems with reconstruction of their property. At a filed study, there were still 8 years after the earthquake event, thousands of slum dwellers living in newly created squatter areas around the city and its historical heritage sites.

The main problem seems to be lack of government control and weak administration systems, because government officials were dealing with some executive jobs rather than governing the reconstruction process. Chaos was



obvious from the early days followed the earthquake disaster; generous donations were falling on the affected areas from inside and outside Iran caused poor people as well as lay workers to come to Bam seeking money and job opportunities. But administration system was too weak to manage proper distribution of facilities and people in real need were suffering destruction of their properties and life, so they were unable to follow long processes to demand help, especially at the first month followed the catastrophe.

It was a continuing processes that on the one hand, native people who could not stand bad situations occurred after disaster were moving from the affected areas, leaving behind them whatever remained from their properties. On the other, there were the outsiders who arrived into the damaged areas, claiming ownership of whatever they find unattended properties. A long drought season in the surrounding areas was increasing attraction villagers from around to come to Bam seeking help and opportunities. It happened also, that wealthy people or survivals were selling their land and houses at low prices leaving the area to the newcomers. The result was that the area became empty from native and wealthy people and full of poor people and lay workers seeking help and job opportunities. Increasing of crime rate was the immediate result and decreasing security was obvious in Bam after the disaster.

The area was affected by some side effects of the earthquake such as destruction of its traditional water supply system. Because Bam is located on a desert area, ancient water supply system has been providing the city and its surrounding areas which needed water. The water was mainly used for agriculture sector, and especially for date palms. Date product of Bam was the main sector of the local economy. But the earthquake destroyed this system partially which caused severe decline to the date product, and this was affecting the economic systems of the area. Unemployment and poverty were the results, and rural migrants who flowed to the city seeking their shares from the international and national assistance.

### **3 Research methodology**

The main research methodology of the research is based on a qualitative approach. A literature review was hold searching for theoretical works and international experiences. Then, a field study was conducted including observation as well as a survey. The survey was done and data collection using a pre-designed questionnaire, resulted in some quantitative data. Data analysis was done based on descriptive analyses.

### **4 Conclusion**

The reconstruction program in Bam created large numbers of job opportunities for workers within construction sector included lay and non-skilled people. They came to Bam, seeking job opportunities as well as living there. Many of these workers were reported to get married with women who became widows because of the earthquake disaster. At the present time, one can see Bam has been rebuilt



but extreme population change can be seen which affected the social and cultural structure of the town.

But, among many side effects of the earthquake disaster in Bam, migration was causing severe economic, social and cultural change to the city and its long history, affecting the cultural heritage of the city which has been great with its rich heritage elements such as the Bam Citadel. Since it was recognized by the UNESCO that Bam is a complete heritage package including its citadel, people traditions, its traditional water-supply system and its date palms, destruction to any part of this package, especially to its social structure, may affect its future heritage.

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