

## Historical Bazaar Recovery after the 2003 Bam Earthquake

Alireza Fallahi<sup>1</sup> and Solmaz Arzhangi<sup>2</sup>

<sup>1</sup>PhD, Associate Professor Shahid Beheshti University, Tehran, Iran

<sup>2</sup>MA in Architecture(post disaster reconstruction) Shahid Beheshti University,  
Tehran, Iran

alifallahi30@gmail.com, arzhangi.so@gmail.com

### Abstract

*Iranian experiences regarding business continuity indicate that following natural disasters, small business recovery has been faced with a number of challenges. The 2003 Bam Earthquake resulted in huge physical destruction and significant impacts on small businesses. However in the process of post-earthquake business continuity recovery, problems were arisen not only for shopkeepers but citizens. For instance, In the case of Bam, lack of specific organization and having a ready plan for pre-program on business continuity management and also inefficient cooperation between the stockholders and the authorities resulted some disputes and conflicts. Although the allocation of low interest loans to small business (bazaar) recovery resulted in some satisfaction among the stakeholders, in some cases implemented plans were not able to facilitate the economic recovery completely. The present paper examines the main issues of bazaar Business Continuity planning after the 2003 Bam Earthquake. It concludes that an integrated Business Continuity planning with a reconstruction master plan may pave the way of better disaster recovery planning in future disasters in same area.*

**Keywords:** earthquake, small business continuity planning, reconstruction, Bam

### 1. Introduction

While Disasters, such as earthquakes, are the most significant events that may disrupt business process activities. Bazaars provide marketplaces, occupations and services for the urban settlers. Earthquake impression survey on bazaar critical activities continuity and having set a pre-plan to support them is considerable. The importance of business continuity should be understood at the bazaar.

As a matter of fact, a resilient bazaar is an important requirement after most catastrophes, especially on local scale. It seems that in order to stay in the market in crisis situation, small businesses need to be able to quickly respond to changing situations after disasters. The Business Continuity Management (BCM) is required to keep small-business resilience and make businesses active in crisis conditions. Furthermore, it seems that affected urban community will be vulnerable when BCM would not be set down.

In the light of historical bazaar as a heritage element in the city of Bam, the primary objective in the rehabilitation phase was small business recovery and shops structural reconstruction. But lack of pre-business continuity plan the process of small business recovery, stakeholders, shopkeepers and their heirs have been challenged.

This paper analyzes Bam small business recovery compares it with business continuity plan principles. It is folded in three sections. The first part reviews the literature and relevant issues in the case of Bam. The second part provides information

about Bam small business recovery. The last section is a comparative analysis of a number of comments in order to optimize business recovery process in future.

## **2. Study Context**

Investigation into literatures on business continuity after natural disasters show that small business recovery is crucial for livelihood rehabilitation. Therefore from the small business continuity point of view, its economic, social and physical aspects should be considered. On the other words, a comprehensive business master plan is required to implement effectively.

Past experiences indicate that, BCM complemented with risk management is an accepted approach that has been established to coordinate key factors of business recovery in response to crisis.

### **2.1. Business Continuity Management (BCM)**

It is claimed that management commitment to business continuity provides a holistic system to business recovery after disasters. Business continuity management is a wide operational spectrum that can cover all activities in small private sectors such as bazaar's shops to extensive private and public sectors. The first step toward the following management is BCM organization establishment [2] and for this reason, some sources are needed. Data, facilities, communications, people and equipment are key elements of BCM. On the other hand, BCM team should be organized to mobilize all required sources. But the challenging question is how small businesses can be resilient with BCM. To achieve this purpose, after business impact analysis and risk livelihood mitigation, the response strategies may be adjusted and the business continuity plan (BCP), set up, based on all analytic processes and strategies. Finally, BCP may be examined and it's culture should be spread around the community. It is notable that disaster awareness, education and training are expletive components of the BCM process.

Therefore, BCM emphasizes on technology, people and all useful resources and applies to most of potential to business recovery. In general, the holistic view of BCM provides a basis for planning to continue small businesses trading running following catastrophic events.

### **2.2. Business Continuity Planning (BCP)**

The most significant output of the BCM process is a Business Continuity Planning (BCP). A BCP process consists of risk assessment, contingency planning and the actual disaster recovery. "In fact, a business continuity plan addresses actions to be taken before, during, and after a disaster "[11]. Planning includes several phases that lead to identify fundamental measures. It appears that testing and maintenance of plans should be implemented in order to gain more confidence in the crisis situation. In this regard, awareness and training of community and small business may assist to set appropriate actions and enhance maintenance and test business continuity planning [6, 3].

In post earthquake Bazaar reconstruction, BCP determines small business recovery priorities. It emphasizes on financial support, consumable supplies and property, infrastructure and people as key recourses. In order to achieve that, plan execution requires allocating appropriate budget, which is most important aspect in business continuity plan [4]. Therefore, financial resource management should be undertaken

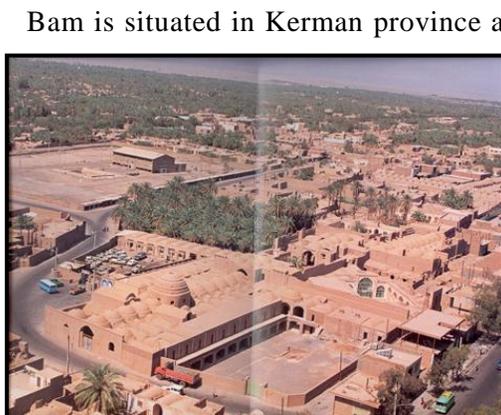
and the disruptions of this activity would be investigated. In this respect, executive protection and lack of fund should be taken into consideration.

### 2.3. Insurance and Legal Issues

"Earthquake is one of the Top Ten Causes of Business interruptions disruptions "[10]. Following most of earthquakes, in most cases, interrupted activities are needed to return to the normal situation. As a consequence, sufficient funding and supporting organizations are essential. In this respect, insurance coverage and insuring small businesses such as bazaar's shops are key factors in recovery activities. Furthermore, from the risk management viewpoint, establishing insurance organizations is fundamental for the recovery process. However, BCP is a down-top approach in planning and people should accept small business insurance culture. In this regard, reconstruction master plan takes account business insurance and allocated fund such as low-interest and long-term loans are made available to small business during reconstruction [7].

In terms of legal issues and also Based on global research, it seems that addressing land tenure and disaster response laws, rules and principles after natural disasters are inevitable. Also small business property is one of the most important issues in the post disaster reconstruction plan. Experiences show that in developing and under-developed countries, disaster legal Services are challenge. The problems are become worse by legal uncertainty after disaster and community relationship influenced by adjudication of land rights. The available literature shows that decreasing contradictions, pre-plan, data gathering, security of land tenure and flexible planning are appropriate solutions. Also in relation to land security legitimacy and rights to land should be come from one source. Therefore, legal and social legitimacy should be approach in the same direction [1].

### 3. Bam Earthquake



**Figure 1. Historical Bazaar before Earthquake Source: ghazbanpour**

Bam is situated in Kerman province and located on an earthquake-prone zone. Since the city of Bam is situated on Trade route, local business has been thriving and Bam old bazaar shown business boom until the 2003Bam earthquake (Figure 1). The devastating earthquake on 26 December 2003 caused widespread damage and 90 percent of shopping centers structures collapsed. As the adobe was used material in historical bazaar before disaster, the cultural heritage, Bam bazaar, was absolutely demolished. Adobe is one of the oldest building materials and it is basically. vulnerable against natural disasters. Adobes constructions are not resistance in seismic areas. This is why; serious damages were suffered by goods and Local business interruption affected Bam livelihood during and after the disaster. Merchants lost jobs and traumatic impact of earthquake make them undecided. As a result, commercial core of Bam became disabled.

## 4. Baazar Recovery

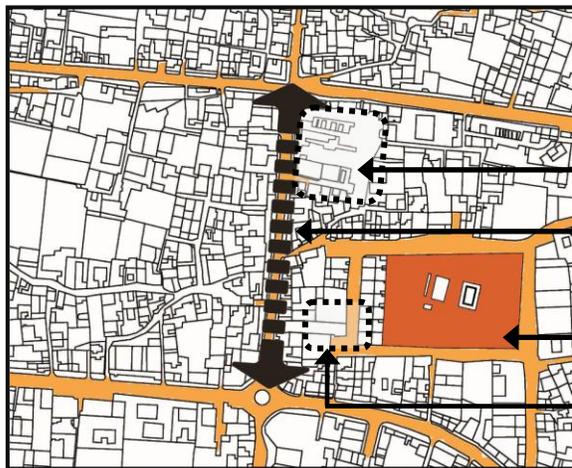
### 4.1. Temporary Commercial Units (containers)

Executive activities to small business recovery after the Bam earthquake begun with fencing and allocating containers as temporary business units. Governor, municipality and the reconstruction headquarters were engaged in small business reconstruction. Government allotted low-interest and limited loans to stores reconstruction per square meter [6] and recovery loans were considered to traditional bazaar. As mentioned earlier, because of continuity of commercial activities, Kerman Assembly of the



Figure 2. Container

Union decided to provide prefabricated units (Figure 2). At the first step, trade people and retailers placed prefabricated units along the Kashani (one-way) street at the front of their shops and business activity begun. In some cases, retailers rented vacant lands



Bazaar located next to one-way street. Historically it is the first commercial core of the city of Bam.

Kashani (one-way) street, the main commercial axis of Bam before earthquake.

Power department parking, which was used to establish temporary business unites.

locate of prefabricated units, after parking evacuation.

Figure 3. Bazaar Location at one-way

from each other to startup their business. Some of them did not consider prefabricated units and built different one with available materials such as wood, galvanized sheet and iron. Although affected community was encountered with difficulties and problems, temporary trade area was gracious to people and community because their basic needs were met. In this respect, after allocating credits to executive committees, reconstruction process begun. commercial axis was evacuated and they were transferred to power department parking (Figure 3).

## 4.2. Bazaar Reconstruction

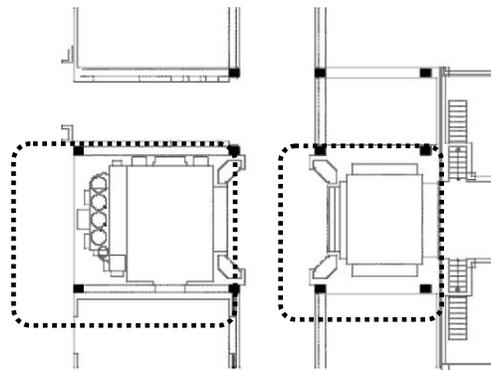
Government considered special budget to bazaar reconstruction. Cultural heritage organization assigned projects to consultants and government funding has spent until the completion of the building construction. To complete the reconstruction condominium, allotted loans to merchants have been using by consultants and contractors until now.

Bazaar area is 18000 square meters and was reconstructed at previous location in three levels includes parking, basement (storehouse, installation), ground floor and first floor. Traditional architectural form such as arch roof considered to bazaar design. In

fact following several meetings, consultants decided to revival bazaar historical identity. Since the bazaar resistance against future earthquake was crucial issue, reinforced concrete frame structure recommended to bazaar rebuilding. Adobe wall thickness was approximately 70cm before earthquake. But use of new materials and structures lessen it to approximately 20 cm. additional remain spaces were applied as joint spaces and corridors was widened.



**Figure 4. Reconstructed Bazaar**



**Figure 5. Old Remain Shops**

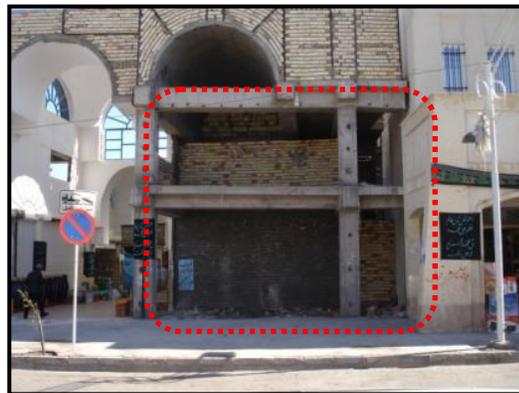
Taking into account the value of heritage, a few of them were left untouched (Figure 5). By the time this paper prepared a few shops in traditional bazaar have been reopened. however, it seems that because of delay in bazaar rebuilding, it still has not started business as a whole.



**Figure 6. Business Activity Around Bazaar**

There are several advantages by locating Temporary units at the power department parking included several advantages. For instance, it was a nearest vacant place to collapsed historical bazaar and merchants could monitoring reconstruction process. On the other hand, since the bazaar was nigh to parking, client did not redirect to buy goods. But these items have been returning to disadvantages after reconstruction accomplishment and parking evacuation. Now this place is crowded and it is considerable part of the quarter. It seems that shopkeepers' willingness to relocate to reconstructed bazaar has declined. Therefore it seems that business continuity at reconstructed bazaar will be delayed. Traditional bazaar recovery faced to more challenges. As mentioned, power department parking is evacuated but business activities are followed around parking in the light of approach of rebuilding appeared to be physical rebuilding more than economic revival (Figure 3). This means that business owners prefer being around parking yet. A number of businesses have also worked in rental business units before earthquake, after disaster they found power department parking surrounding to continue previous businesses (Figure6). Hence temporary commercial units have been continuing. According to traditional businessman who are relocated to newly established bazaar, business situation is evaluated inappropriate. It seems that delay in traditional bazaar reopening than other business units, caused bazaar inactive. Why, after 9yaers, bazaar credit has not been recovery.

Besides, legal issues are crucial principles that Bam business recovery confronted to them. As shown in figure 8, a column located at edge of unit near the neighbor wall and exterior wall has been damaged. Since every floor has two ownerships, it caused Lawsuits between them. None of them accept the existing column at the outer wall. There was no similar disagreement in the past. Now situation of the two commercial units is ambiguous.



**Figure 7. Inappropriate Column Locating**

## 5. Conclusion

This paper has investigated small businesses reconstruction process in the city of Bam after a major earthquake and focused on the Business Continuity Planning principles that could be applied in the city. Several results are emerged as follows (table 1):

The followings emerged from personal communications with local business people:

- Shopkeeper Desire to take more from reconstruction funding.

- Bazaar has not been completed until now.
- According to people evaluations, trade people decided to recovery their business by own solutions.

**Table 1. Findings**

| Addressed approach                   | All challenges   |  |
|--------------------------------------|--|--|
| Business Continuity Management (BCM) | According to the surveys, there is no BCM in Iran. So in the light of loss of business continuity plan, Bam business recovery measures confronted with issues as a blow:   |  |
|                                      | <b>Bam issues</b>  |  |
|                                      | lack of data   | <ul style="list-style-type: none"> <li>• Because of inadequate data, Properties limitation was unknown. So shopping center reconstruction has faced challenges and shops areas are not be accurate.</li> <li>• Heirs' problems were appeared in the light of insufficient data in relation to shops area and their heirs after earthquake and loss shopkeeper.</li> <li>• Since there were not sufficient losses data, Shop owners desired to take more.</li> <li>• As there are not suitable data in relation to people's installments, they have not pay back and the asset of shopkeepers of have not collected.</li> </ul>   |
|                                      | facilities allocation  | <ul style="list-style-type: none"> <li>• Inconsistent the bank facility during reconstruction led to tensions.</li> <li>• Equal facilities allocation without considering shops areas and their properties.</li> <li>• Facility Raised by increase Shopkeepers demand to take more.</li> </ul>   |
|                                      | role of organization in reconstruction   | <ul style="list-style-type: none"> <li>• During reconstruction, contractors have been changing by organization. So there was no stable plan.</li> <li>• There was any business organization and lack of BCP after 2003 bam earthquake.</li> </ul>  |
|                                      | legal issue  | <ul style="list-style-type: none"> <li>• Bam small businesses reconstruction faced to inheritance problems. Therefore, the crucial question was which heir should be addressed in small businesses reconstruction.</li> <li>• The impact of restoration theory on property and land tenure is an important issue. In this regard, because of the role of collapse buildings at community memory, several shops at bazaar did not reconstruct. Hence shop owner have been facing to challenges.</li> <li>• Architectural design without considering land tenure and shop owners properties. Hence several shops relocated and became smaller after reconstruction.</li> </ul> |
|                                      | insurance  | <ul style="list-style-type: none"> <li>• There were not any supporter systems such as insurance in Bam business recovery.</li> </ul>   |
|                                      | upper management   | <ul style="list-style-type: none"> <li>• Bazaar was a heritage. So applied approach to bazaar reconstruction was top-down. As a consequence shop owner did not found themselves at the flexible plan.</li> </ul>   |
| people participation                 | <ul style="list-style-type: none"> <li>• Migrant labor and non indigenou experts in reconstruction process led to unfamiliar implementation in the city of Bam for local community.</li> <li>• Shop owner participation was limited and their orders have participated in reconstruction.</li> </ul> |  |

Along bazaar rehabilitation, in the first step the reconstructing budget was funded and properties report was received from Registration Office. In the next step, city municipality approved them. So consulting firms and contractors being applied by Iran Reconstruction Head quarter and low interest loan was assigned. In shopping center reconstruction project, involved practitioners were trying to reconstruct shopping center as an integrated system in architecture and structure. So they destroyed remaining buildings and implemented a new plan (Figure 5).

According to a number of small businesses, BCM is very important in the context of Iran. It adjusts shopping center reconstruction after an earthquake and helps the businesses original

states to be restored and the tension caused by the earthquake lessened. It seems that, specific organizations may be established and small business insurance system in disaster-prone cities would be enforced. Also insurance system provides an appropriate context for data gathering before disaster and sufficient funding can be allocated in business recovery.

Furthermore, it was observed that local service providers such as experts, local governor and internal resources have not been applied in business recovery implementations in the city of Bam. Therefore BCP should takes into account local supporters and build up awareness, education and training system at public level. Also to achieve resilient businesses, there are some obstacles such as legal issues and lack of during disaster laws. It seems that flexible inherent law and land tenure system that cover all feasible conditions is an appropriate solution.

As a consequence, business continuity plan must to be integrated with reconstruction master plan and all businesses recovery decisions would have been referred to above integration.

## References

- [1] M. David, "With the supervision of Adriana Herrera Garibay: Assessing and Responding to Land Tenure Issues in Disaster Risk Management", In: FAO 2011, (2011).
- [2] H. J. Schumacher, "Disaster Recovery Planning: Insuring Business Continuity", Imperial Consulting, Inc., Strategic Research Institute 12/95; published in EERI Newsletter 8/96 & Planning 'public seminars' and 'customized learning solutions'.
- [3] Australian National Audit Office, "Business Continuity Management", Guide to Effective Control, (2000).
- [4] J. Williamson, "Business Continuity Planning", (2002).
- [5] Federal Financial Institutions Examination Council, "Business Continuity planning", FFIEC, (2003).
- [6] <http://inlinethumb02.webshots.com>.
- [7] Iran Reconstruction Head quarter's documents.
- [8] A. Herrera Garibay, P. de Wit, L. Eleazar, F. Jordan Bucheli, S. Norfolk, R. Sanchez Mena and S. A. Shafi, "Land tenure and natural disasters", In: FAO 2010, (2010).
- [9] <http://www.mehrnews.com>.
- [10] Source: Strategic Research Institute 12/95; published in EERI Newsletter 8/96.
- [11] Texas Department of Information Resources Rev., Austin, Texas (2004) December.
- [12] <http://360ap.com/wpcontent/>.

## Authors



**Alireza Fallahi**, PhD, Associate Professor Shahid Beheshti University, Tehran, Iran

Email: [alifallahi30@gmail.com](mailto:alifallahi30@gmail.com)



**Solmaz Arzhangi**, MA in architecture (post disaster reconstruction), Shahid Beheshti University, Tehran, Iran

Email: [arzhangi.so@gmail.com](mailto:arzhangi.so@gmail.com)