

# Social Issues in Post Disaster Reconstruction Planning

(A Grounded Theory Approach)

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**ABSTRACT:** Post disaster reconstruction in the destructed zones entails the social aspects in addition to the physical and urban aspects, because of the presence of affected people in the very location.

The presented research aims to assess the social aspects of the post disaster conditions in the course of reconstruction, which take into consideration the related social factors in the affected community. The research also looks for the various influential aspects of post disaster urban planning in order to achieve a different framework for the job.

Since the subject might be considered as a new approach, and for the vast and numerous aforementioned aspects in the expertise reference, the research method is based on "Grounded Theory" in order to analyze and categorize the given approaches.

The results of theoretical studies have been compiled with the academic expertise viewpoints and with the opinions of Iranian experienced experts who were involved in the course of post war and post natural disaster reconstruction, through the face to face interviews. In order to benefit a practical implication of the theory, the post disaster reconstruction process of Manjil-a mountain town in Gilan, north of Iran- after the earthquake in 1990 has been analyzed and reviewed.

The fulfillment of the research necessitates; assessment of social questions, collective behavior, individual needs and requests of affected people, in the course of planning for post disaster reconstructions, and ultimately employment of social capacity, as well as the relations among communal network at the entire level of the affected society.

**Keywords:** Post disaster reconstruction, Grounded theory, Social structure, Social aspects of reconstruction, Manjil earthquake.

## INTRODUCTION

The caution in reconstructing destroyed building or any damaged city construction has been started since the Second World War. Since 1980s; many subjects have been studied by researchers in different fields of interest. Although post disaster almost evident, but there is a little specific text on it; and because of variety of issues in this field, it is difficult to find specific axis related to physical contents in post disaster reconstruction, yet.

There is a systematic methodology in the social sciences involving the discovery of theory through the analysis of qualitative data, named "Grounded theory" method. This essay tries to use it, to categorize main concepts and issues in post disaster reconstruction in order to find out "Which of social components and elements play role in physical planning after disasters?"

The presented research is written in 4 parts and 8 sections: The first part is about the research process, the reason of selecting a grounded theory approach, and describing the methodology;

In the second part, reconstruction is introduced, through literature review;

Third part categorizes the post disaster experiences of reconstruction in all around the world using grounded theory, And the last Part concludes the main social concepts in

planning post reconstruction, discussing Iran's post disaster reconstruction.

## Literature Review

Post disaster reconstruction is categorized in the emergency actions that shall be done immediately after disaster. It contains rehabilitating the destroyed cities from war or natural disasters or any other accident that will cause without any prediction. In this condition, city will be destroyed and it will not be useful, so reconstruction should be immediately started. Many experts in human sciences and sociology have argued this subject. They have introduced many points to these conditions. Most of them agree on this subject that all performances are clarified into the parts of relief, recovery, rehabilitation and reconstruction (Kates et al., 2007). These periods are introduced by disaster assessment, cleaning up the debris, recovery, rehabilitation and reconstruction (Aysan and Davis, 2006, 29). Actually there is a few documentaries except for which that describe main subjects by explaining the lesson learned in experiences of post disaster reconstruction. Rowland believes that, when a natural disaster happens, all the built constructions will be destroyed. Then some other organizations that act separately will start their work in addition to the known organizations and they make new condition. In his view, this cracked organization needs a special consideration (Rowland, 1995). He introduced reconstruction

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as a range of performance of economic, social, politic and psychotic issues that will affect on accelerating and sustainability of human development.

Based on Collins idea in the book “Disaster and Development” (Fig. 1) (Collins, 2009, 3), we can categorize the subjects of disaster in 3 aspects: Managerial, Social and Physical: emergency management, public health, development studies and environmental management; as managerial subjects.

Social and behavioral studies, human geography and historical and political studies; as social subjects.

Physical geography and physical planning; as physical subjects  
Post disaster reconstruction in the destructed zones entails the social aspects in addition to the physical and urban aspects, because of the presence of affected people in the very location.

Campanella pointed out that reconstruction in human social contexts as like as physical structure, are important in the condition after a disaster (Campanella, 2006). Consequently, the main problem is to back this structure to life (Rowland ,1995).

## MATERIALS AND METHODS

### Research process

This research wants to extract and categorize the main social subjects of post disaster reconstruction in the field of urban planning by studying the subjects related to post disaster reconstruction and expert’s viewpoints.

Since reconstruction after disaster is a new field and it has no classified theory for studying and also for the vast ranges of probable answers, we use ground theory.

This study aims to identify social issues affecting the design stages after disaster; and has 3 steps:

**First step:** Restoring information and documents about ideas and experiments after disasters since 1980 to 2010. From scientific and academic reputable researches, involving 18 natural disasters, from 1985 earthquake of Mexico City until 2006 Philippines disaster.<sup>1</sup>

**Second step:** using grounded theory to categorize and analyze major issues due to unknown variables and paths of relation

between different areas of the reconstruction after disaster.

**Third step:** Interview with executives, professionals, Academician and experts in the post disaster reconstruction in Iran, Based on the earthquake in the year of 1990 (Manjil). Result of this research will introduce the important subjects, related to social aspects after disaster in Iran by integrating ideas and comments.

### Grounded theory

The starting point of research in researches based on ground theory is a general question. Other questions will get importance during collecting and analyzing data and shows which subjects should be studied (Strauss and Corbin , 2008, 35). The main feature of this approach is to compare one item in a category with permanent items (Flick, 2008, 108). Analyzing data will not be done free of collecting and sampling. In this stage we try to use old data to get decision for future. All data will be separated and they will get content during getting codes and they finally sit beside each other in new form (Flick, 2008, 329).

Based on Strauss and Corbin coding process, Classification will divide in 3 parts: open coding, axial coding and selective coding. These parts are not separated and they will help each other the research processing.

In a view, we could say that analyze is started from open coding and it finally finish in selective coding (Strauss and Corbin , 2008, 117).

## RESULTS AND DISCUSSION

### Post disaster reconstruction worldwide

After collecting information about natural disasters from different data bases and documents, and finding the substantial differences in the relief phase- because of the critical issues , due to author’s professional interest, this research is limited to the next phase of the removing debris of natural disaster. Then in the next step, data are categorized and coded by ground theory.

**Open coding:** The data is categorized in choosing process and permanent comparing and using continuous questions. So among a lot of data on reconstruction, social issues related to different phases were stored (Fig.2).

In the literature reviewed, besides the role and duties of the architects, urban planners and specialists in physical rehabilitation, there are specific roles for people in different parts - public, private and civil society - , too., The roles and responsibilities of each of the components of the community, are considered, according to the different phases of reconstruction (Ganapati and Ganapati, 2009). It shows how different levels of decisions, are taken by the private or public authorities. In a sense, urban professionals and decision-makers in the private and public community, as well as the residents, are together and jointly provide support and assistance for local community, shareholders and legal or international entities, with ideas and thoughts (Nadelman et al., 2007; Ganapati and Ganapati, 2009).

The role of academic professionals in developing a program framework is important. Non Governmental Organizations (NGOs) and grassroots’ organizations, who work in this division, have role to play to support the affected population (Kondo, 2008) . In addition to specific groups of vulnerable women and orphans and disabled people and the special protection of this group is recommended (Akerter, 2007 ;



Fig. 1: Disaster and development studies  
(Source: Collins, 2009)

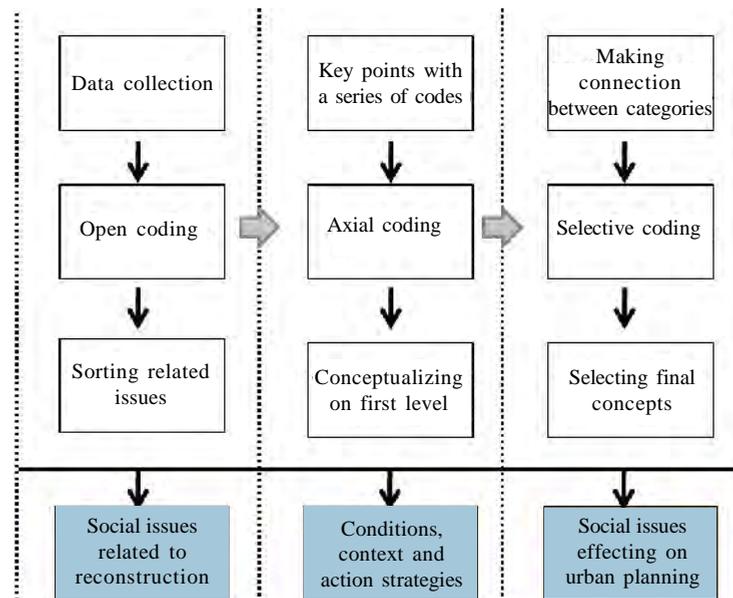


Fig. 2: Data coding process

Zengand Silverstein, 2011 ; Jauhola, 2010 ; Gandy, 2006). Physical actions of post disaster reconstruction, with the help of the local community are eligible for greater effectiveness. Post disaster experts train both locals and construction workers and show them how to construct. It helps to promote and advance the reconstruction and besides they train the employment in the construction industry (Jha et al., 2010). Here, both the media's role in educating and informing, and the role of gatherings between reconstruction experts and locals are important (Jha et al., 2010). These meetings are intended to obtain basic information about local community and to assess available resources and people's needs, which are seen almost in all of the experiences of the past three decades. Also we can see the participation of community groups, local and international non-governmental organizations in all stages of the planning process- from developing criteria for the construction and taking enforcement actions. The result of this type of planning is involving the person in selecting the housing model from the various models proposed, based on the cultural principles and local patterns (Jha et al., 2010; Green, 1995 ; Bates and kiely , 2009).

**Axial coding:**In this step the same codes are set next each other, and then related subjects will stand in main axe to make new subjects. So, social subjects are categorized in 2 parts; before and after disaster.

Based on the research findings, for a post disaster planner, it is necessary to define a holistic view to recognize the needs. The findings also refer to importance of collection and analysis of information measures (McEntireand , 2002 ; Kage , 2009). In the phase before the disaster, the acquisition of specialized knowledge is required for infrastructure measures. It also refers to numerous aspects of reconstruction. In recent years, consideration to training and awareness of disaster is more ( Sharma, 2003; Mitchell, 2006). The result can be seen in an effort to coordinate reconstruction based on local condition (Zeng and silverstein, 2011; Mittelmarm and Lamarre , 2004). For a victim after the disaster, relations with the families,

relatives and friends, and the ways that they get help from relatives, help to contribute the formation of social networks and consequently leads to support reconstruction (Hardoy et al., 2011).<sup>2</sup> Post disaster reconstruction faces complicated problems because of engaging non-specialists in different fields of social and environmental issues. It will strengthen the social networks, if a proper planning is used (Pathiraja and Tombsei, 2009).<sup>3</sup> The recent literature emphasizes on citizen participation in various phases of reconstruction (Diefendore, 2009).<sup>4</sup> The Above mentioned points are forming three main subjects consisting of preparation to apply social issues, taking advantage of social networks ' power and Public participation in planning (Fig.3).

#### Post disaster reconstruction in Iran

At this part of research, the main questions of social issues are determined by using available data. The results of theoretical studies have been corresponded and compiled with the academic expertise viewpoints and with the opinions of Iranian experienced experts who were involved in the course of post war and post natural disaster reconstruction, which consequently was complemented through the face to face interviews with them. In order to benefit a practical implication of the theory, the post disaster reconstruction process of Manjil-a mountain town in Gilan, north of Iran- after the earthquake in 1990 has been analyzed and reviewed.

Manjil earthquake reconstruction program in the framework of Gilan and Zanjan reconstruction plan was drafted with the participation of experts and executive management in a governmental organization. The focus of this program is based on a generalization of a theory of anthropocentrism. It takes advantages of experiences of post-war reconstruction and the last post disaster reconstructions in Iran. Manjil reconstruction plan is presenting a new method in managing post disaster reconstruction and to hand over responsibilities to the local community.<sup>5</sup>

To assess the physical results of the manjil earthquake, we

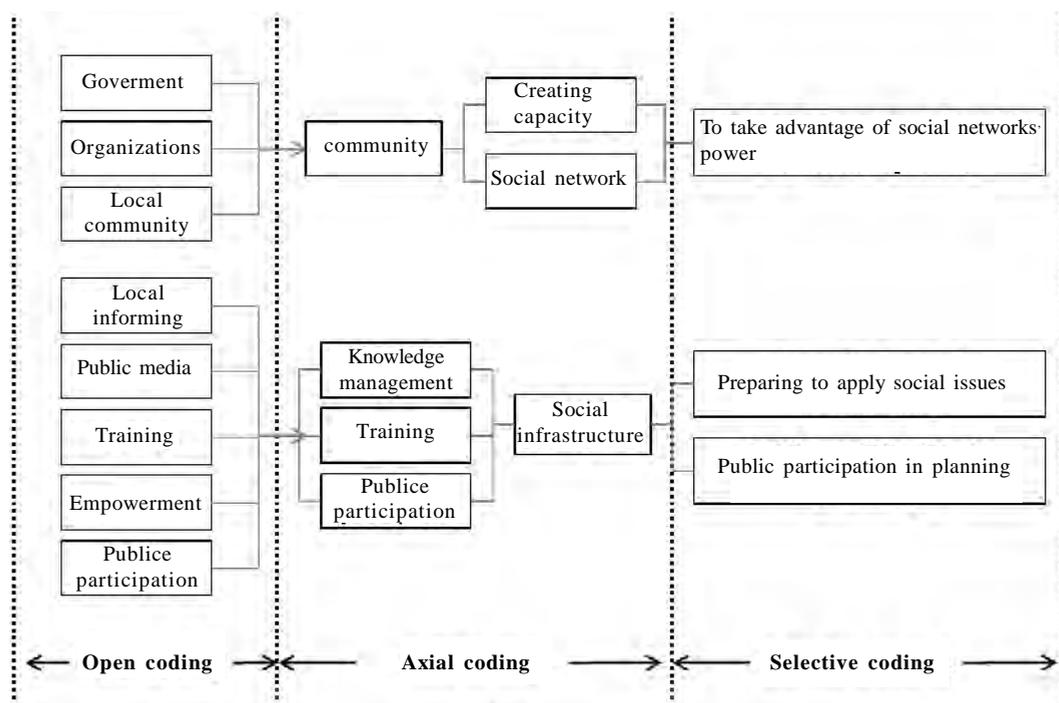


Fig. 3: Data coding process using literature data

interviewed with 8 experts consist of:

- A Policy maker (the then minister of Housing and Urban Development)
  - 3 academic experts in the field of post disaster reconstruction.
  - 4 executive manager [managers in charge at Bonyad maskan]
- Interviews were formed according to the results of theoretical studies and discussions about the direction of social issues and experts were presenting their ideas. Totally, 10 in-depth interviews for more than 16 hours were held.

According to the then minister of Housing and Urban development, taking into consideration, the role of social organization in the affected zone, is the basic issue in order to take proper actions in the course of Manjil reconstruction. He also valued the exploitation of local potential and social networks as well as public participation in different stages of reconstruction. He also believes that all actions were concentrated individual and communal empowerment. The same fact was repeated by 3 other academic experts that have been interviewed for the same subject. According to one of them, despite the previous experiences, government has not evoked expectations among the local community. Therefore the reconstructions tasks were carried out by the very local community, and based on their attitudes and trends, while benefiting over mental aids and budget allocations.

As a result, because of its individual responsibilities of the local community for reconstructing their houses, finally affected people were more satisfied than ever before.

The then minister also noted that individual responsibility for the affected person is the basic policy for the reconstruction. Though the executive directors in the course of reconstruction believe the guiding and coordinating role of government, were the main cause of success in the course of the reconstruction,

and the speed of permanent settlement of the local community. Such kind of governmental observation which was vastly implemented in an organizational structure, all over the affected areas, as well as in Manjil, emphasizes on the planning as a supporting role for urban reconstruction, and also the wise actions with regards to the conditions and time in area. Three of the academic expertise as well as the then minister, all believe that the corresponding proportion of all reconstruction activities, with the affected areas, and the requirements of the local community as well, were based on the results of rapid surveys and studies conducted by the academic expertise and the executive directors in charge, in order to draw an action framework which might be considered as the main, and brilliant doctrine of post disaster reconstruction in the related field of studies. As a result, according to the then minister in charge, the assessment of the target community, and also cognition of the collective behavior of the affected community, is the main tools in order to choose appropriate approach toward the planning in the post disaster reconstruction tasks.

As a matter of fact, in the local community of Manjil, reconstruction plans were not merely based on the technical knowledge and available ordinary information by the expertise, but the local community was thoroughly and deeply involved to materialize the process of post disaster reconstruction. So the main issues in Manjil reconstruction- as an Iranian experience - are as below:

- The role of victims in reconstruction,
- Suitable social structures,

The role of government in reconstruction.

Based on the results of coding process and the selection of topics and themes, 2 main advices concluded as below (Fig.4):

- Taking advantage of local power
- Government's guiding policies

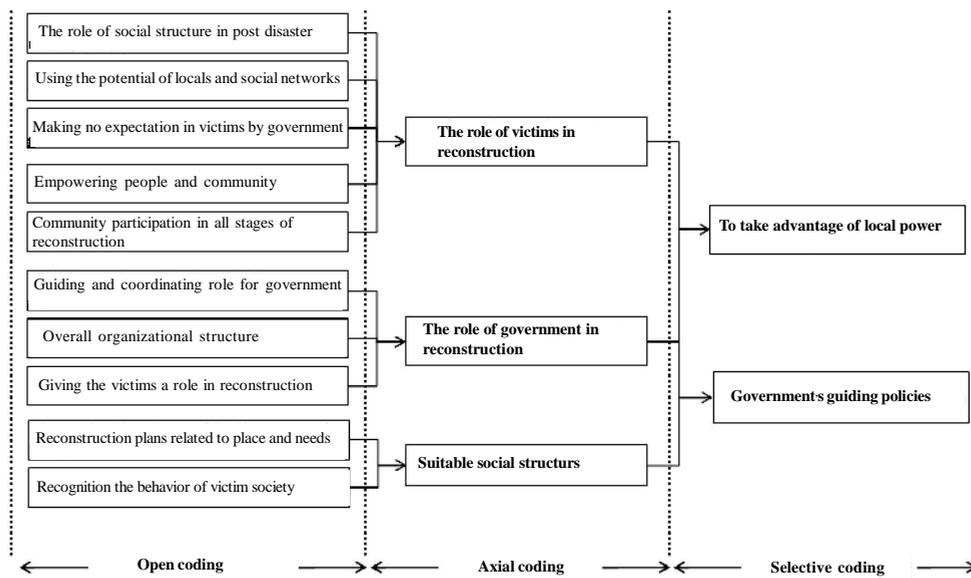


Fig. 4: Data coding process using interviews

## CONCLUSION

Through integrating the post disaster reconstruction experiences in the world and the viewpoints by Iranian experts, the priorities in urban planning are as below:

Assessment of the social questions, collective behavior, needs and requirements of the affected people in the planning stage. Use the power of social networks and relations among local people, at the stage of implementation.

Thus, concentration on the place and local community will make the experience of reconstruction unique, in each place. Above conclusion that is resulted from grounded theory shows the important role of social issues in the post disaster situation. Therefore, the prerequisites of any planning in post disaster reconstruction is assessment and getting acquainted with the peculiarities of the local community. The next step is trying to choose suitable solutions, according to social and cultural conditions in damaged area.

## ENDNOTES

1. Mexico earthquake 1985; Turkey Earthquake 1993; 1995 Japan earthquake, 1998 Kenya, Nicaragua, Honduras, Hurricane; Earthquake in Turkey in 1999 and Columbia ; 2000 Mozambique flood; earthquake 2001 Indian earthquake of 2003, the 2004 tsunami Sri Lanka, India and Indonesia; Earthquake 2005 India; Pakistan storm 2005, and 2006 Philippine earthquake.

2. Some of references are as below:

(Drabek and Key, 1976)

(Yanay and Benjamin, 2005)

(Cain, 2007)

(Pyles, 2007)

(Bonanno et al., 2010)

3. See these references for this topic too:

(Pathiraja and Tombsei, 2009)

(Mitchell, 2006)

(Pardasani, 2006)

(Kodrich and Laituri, 2005)

4. Also in (Ganapati and Ganapati, 2009) and (Kondo, 2008)

5. Thursday Morning, June 31, 1369 an earthquake with magnitude 3/7 on the Richter scale occurred in the provinces of Gilan and Zanjan. Manjil was the nearest city to the earthquake, so it damaged more than the other cities. Nearly 9 percent of the total population was killed and damage was great in all areas. (masaelie, 1996, 29) After the earthquake the "Islamic Revolution Housing Foundation" was elected as Executive manager. To make the comprehensive plan for housing reconstruction is one of the most important actions by this organization. Some of social policies in this program are as below:

Managing the housing units in the affected areas of procurement, design and implementation by landlords

Providing and training manpower in the first stage, on adjacent areas if required. Activating regional and local decision-making systems and procedures with the participation of local of the community.

## REFERENCES

Aysan, Y., & Davis, I. (2006). *Rehabilitation and Reconstruction*.

Tehran: Shahid Beheshti University Publisher, Iran.

Bonanno et al. (2010). *Weighing the Costs of Disaster: Consequences, Risks and Resilience in Individuals, Families and communities*. Psychological Science in the public letterset.

Collins, A.E. (2009). *Disaster and Development*. Routledge, Oxon.

Campanella, R. (2006). A Proposed Reconstruction Methodology for New Orleans. *Journal of Architectural Education*, 60 (1), 12-13.

Diefendore, J.M. (2009). Reconstructing Devasted Cities: Europe after World War II and New Orleans after Katrina. *Journal of Urban Design*, 14 (3), 377-397

Flick, U. (2008). *An Introduction to Qualitative Research*. Tehran: Nei.

- Ganapati, N.E., & Ganapati, S. (2009), Enabling participatory planning after disasters : A Case study of the world bank's Housing Reconstruction in turkey. *Journal of American association*, 75 (1),41-59
- Gandy, M. (2006). the Drowned world: J.G Bellard and the politics of Catastrophe. *Space and Culture*, 9(86).
- Green, R. (1995). Widening Horizons in Post-war Reconstructing in Disaster. *Disaster Prevention and Management*. 4,(1), 38-44
- Hardoy, J., Pandiella, G., & VelaquezBarrero, L. (2011). Local disaster risk reduction in Latin American urban areas. *Environment and Urbanization*, 23( 401).
- Jauhola, M. (2010). When house becomes Home – Reading Normativity in Gender Equality Advocacy in Post-tsunami Aceh. *Indonesia, Gender Technology and Development*, 14(173).
- Jha, A.k.,Barenstein J. D.(2010). *Safer Homes,Stronger Communities(A Hand book for Reconstruction after Natural Disasters)*. The world bank and Global facility for disaster reduction.
- Kage, R. (2010). Making Reconstruction work: Civil Society and Information after War's End. *comparative Political studies*, 43 (163).
- Kates, R.W., & laska, I. (2007). Reconstruction of New Orleans after hurricane Katrina : A research perspective. *In City Space* , 9 (3), 5-22
- Kodrich, k., & Laituri, M. (2005). The Formation of a Disaster Community in Cyberspace: The role of online News Media after the 2001 Gujarat Earthquake. *convergence*, 11 (40).
- Kondo,T. (2008). *Planning for post.disaster Recovery in New Orleans after Hurricane Cathrina*. In International Symposium on City Planning, Tokyo. available at :http://www.tamiyokondo-lab.jp (accessed 8.june.2011)
- Masaelie,S., & Bahreini,H. (1996). *Land use in seismicities-case studies: manjil,loshan,roodbaar*,Tehran:Bonyad maskan.
- Entire, MC., David, A., & Fuller,C. (2002). The need for a holistic theoretical approach:an examination from the elnino disasters in Peru. *Disaster prevention and management*,11 (2),128-140
- Mitchell, J.K. (2006). The Primacy of partnership: Scoping a new National Disaster Recovery policy. *The Annals of the American Academy of political and social science*. 604 (228).
- Mittelmark, M. B., Lamarre, M.C. (2004). The IUHPE'S response to the tsunami disaster. *promotion and Education*, 11 (5).
- Nadelman,R., Nichols, C., & Saracooper, S. (2007). *learning from the mexico city earthquake :dynamics of vulnerability and preparedness*, case study prepared for the global report on human settlements 4-17
- Pardasani, M. (2006). tsunami reconstruction and redevelopment in the Maldives. *disaster prevention and management*,15 (1) ,79-91
- Pathiraja, M.P. (2009), Towards a more "robust" technology ? capacity building in past-tsunami srilanka. *disaster prevention and management*, 118 (1), 55-65
- Pyles, L. (2007). Community organizing for post-disaster social development: Locating Social work. *International Social work*. 50 (321).
- Rowland, J. (1995). rebuilding Sarajevo. *disaster prevention and management*, 4 (1), 32-37
- Sharma, V.K. (2003). Disaster Management- Approach and Emerging strategies in India. *vision: The Journal of Business perspective*, 7 (135).
- Straus, A., Corbin, J. (2008). Basics of Qualitative Research:Grounded Theory,Procedures and
- Yanay, U., & Benjamin, S. (2005). The role of Social workers in disaster: The Jerusalem experience. *International Social work*, 48 (263).