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Chapter 5

# Participation in Natural Disaster Reconstruction, Lessons from Iran

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Additional information is available at the end of the chapter

http://dx.doi.org/10.5772/55004

## 1. Introduction

Post disaster reconstructions are naturally multifaceted, uncertain, multiscale and affect multiple actors and agencies. Some aspects in Post disaster reconstructions are more important like; cost of reconstructions, psychological problems of damaged area, need to social and economical recovery. To solve a part of these problems, stakeholder participation is progressively more being sought. This procedure has been changed into a paradigm in post disaster reconstructions and it has been found a spectrum in world wide. Participation is increasingly becoming regarded as a democratic right (Reed 2008), but execution methods and performance of participation follow different patterns. These differentiations are due to view points of governments to participation, political and economical condition of countries.

Participation is an especial experiment in any post disaster reconstructions that it could affect further reconstruction. Iran as a vulnerable country in the world experienced strong earthquakes in the past centuries, due to pressure of Arabian platform on country (Berberian and Yeats 2001). The Tabas (1978), Ghaen (1980), Golbaf (1981), Manjil (1990), Bou'in-Zahr (2002), Bam (2003), Zarand (2005), Mazandaran (2005), Borujerd (2006), Qeshem (2008), Damghan (2010), Hosseinabad (2010), Kahnooj (2011) and Varzeqan (2012) are examples of such earthquakes. Several different rehabilitate and reconstruction procedures have been adopted in disaster-affected areas. Participation provides an effective framework for natural disaster recovery. It decreases cost of reconstruction, helps to people psychological recovery and outsider affair acceptance. Therefore Participation is accepted as effective framework in disaster recovery and reconstruction.

It expected that new strategies will be adopted in further reconstructions. These strategies should provide a more effective framework in natural disaster management. Participation is

an important feature in this procedure that makes disaster management effective. But this feature has occurred in Iran?

The article tries to examine this framework and answer following questions:

What participation strategies have been selected for reconstruction in Gilan-Zanjan, Bam and Lorestan earthquake?

What are the differences between these strategies and their outcomes?

## 2. Theoretical debate

'Participation' in social affairs and development dated back to the 1960s-70s (Ling, McGee et al. 2010). participation entered into planning domain in 70s (Reed 2008). Participatory techniques such as Rapid Rural Appraisal has been used especially by experts in development arena (Tsouvalis and Waterton 2012). From 90s term of participation has been overused. It led to ambiguous into means and ends. Ambiguity distinguishes between the efficiency, equality and empowerment arguments. (Cleaver 1999).

From 90s and afterward different facet of participation were discussed such as: Transparency in decision-making, Social integration (Lizarrald, Johnson et al. 2010), more partnerships; mobilization self-reliance, control and access to power, resources and basic services; (Victoria 2002), as a means leading to a precise end, comprehensive empowerment of poors (Sliwinski 2010), gender equity (Christoplos 2006), 'good governance' and democratic decentralization, accountability, (Ling, McGee et al. 2010) ensure the sustainability of the reconstruction, successful implementation (Mahfuzar and Chowdhury 2011), build a culture of safety, ascertaining sustainable development, enriched by social capital (Duxbury and Dickinson 2007).

The last period in participation referred to ''post-participation'' and learning from the mistakes and successes of this long history (Reed 2008). Critical view of point about participation rose simultaneously with participation growth (Cleaver 1999; Cooke and Kothari 2001; Edigheji 2004; Piffero 2009).

Participation trickled into the different discipline. It narrowed down and many classifications elaborated by different approaches and divers terminology (White. 1996; CHoguill 1996 ; Tosun 2006; Lizarralde and Massyn 2008; Reed 2008; Becker, Saunders et al. 2011; Tsouvalis and Waterton 2012). Arnstein's (1969) presented the first typology of participation as ''ladder of participation'' based on power redistribution in eight class (Arnstein 1969). Fiorino (1990) presents three category for participation: 'normative', 'instrumental', and 'substantive' (Tsouvalis and Waterton 2012). White (1996) classified it into four category as: nominal, instrumental, representative and transformative (White. 1996). In the reconstruction Da Silva (1980) suggested five levels of participation as: management, financing, design, construction of components and assembly of components (Lizarralde and Massyn 2008).

The meaning given to participation varies significantly from case to case (Barenstein 2011). Participation has been seen as an approach, as a method, a set of guidelines for involving

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communities in specific planning activities within bodies of knowledge. But we understand participation as: "Capacity building and empowerment process of people or local community in manner that enable them to control the causes which affects their lives." The origin of definition refers to democratic theories and human right based approaches. According to these approaches citizens have a right to influence decisions that affect their lives and is based on principles of citizen empowerment, equity, and social justice (Pomeroy, Ratner et al. 2006). We try to go beyond short term outcomes such as: reducing conflicts, acceptable and particular ends, more cost-effective, get access to additional resources, create sense of ownership. It tries vice versa to emphasis on institutional development and continuation of participatory institution in area.

Some researchers criticize the empowerment concept. They believe empowerment is unclear and it does not obvious who will be empowered (Cleaver 1999). Empowerment and capacity building in reconstruction process does not perceive merely as tool for empower marginalize people or other special groups. Empowerment is not redistribution of power but also it is as democratic practice and making institutional foundation of socio-cultural wisdom for future development. Thus it looks at unwanted circumstance as opportunity to strengthen social capital as a base for not only reconstruction, but also for sustainable continuum development. Thus it tries to empower all people and group, social integration.

The ideal empower process is allowing community members to make their own decisions and having authorities to help implement what they decide (Becker, Saunders et al. 2011). But always it faced with obstacles in operation. There are some gaps between presumption and action (Davidson, Johnson et al. 2007). Obstacles driving forces divided in four main sub-groups: a) general barriers, b) obstacles related to developer agencies, c) barriers related to government and d) barriers related to local community.

**a.** General obstacles could be summarized as:1) Different perception of participation by verity of stockholder, 2) participation appeared as 'tyrannical' (Sliwinski 2010), 3) Information deficiency, 4) Lack of resources, 5) Lack of motivation, interest, or time (Kruahongs 2008), 6) Unrealistic levels of expectation(Holdar, Zakharchenko et al. 2002), 7) Difficulty or deficit in comprehensive community needs assessment.

**b.** Obstacles related to developer agencies obstacles could be précised as: 1) Lack of awareness of the need (Holdar, Zakharchenko et al. 2002), 2) Lack of skills, culture of participation and experience in this field (Holdar, Zakharchenko et al. 2002), 3) fear from delay or revise projects (Adomokai and Sheate 2004), 4) difficulties in building up mutual trust between agencies and communities (Ishmail, 2005; adopted from Lizarralde and Massyn 2008), 5) time and political pressure (Jha, Barenstein et al. 2010), 6) Improper behavior by local community, 7) Local culture misunderstanding.

**c.** Some barriers relate to government and its deputies such as: 1) the decision-making process (Duxbury and Dickinson 2007), 2) inappropriate policies (Duxbury and Dickinson 2007), 3) Focus on short term issue rather than development and long term issues, 4) government structure and their perception and wants from participation, 5) difficulties to integrate the community in the design and management of the project (Ishmail, 2005;

adopted from Lizarralde and Massyn 2008), 6) political pressure (Jha, Barenstein et al. 2010), 7) bureaucratic and institutional problems (Ophiyandri, Amaratunga et al. 2008).

**d.** Last group of barriers refer to local community. it include as: 1)conflicts and tensions between the residents (Sliwinski 2010; Yung and Chan 2011), 2) disbelief and distrust, 3) lack of confidence (Kruahongs 2008), Lack of cooperation between the stockholders, 4) Limited access to information (Kruahongs 2008), 5) Lack of skills, participation culture weakness (Holdar, Zakharchenko et al. 2002; Jha, Barenstein et al. 2010), 6) diversity of stockholders interests (Jha, Barenstein et al. 2010), 7) power inequalities within groups (Reed 2008).

Despite all difficulties in performing participatory in damaged area, participation encounter with some critics too. many would agree that participation has, become almost a dogma, a belief or an act of faith that has not delivered on its promises and bit is excessive standardization and missing its' objective while being instrumentalized (Sliwinski 2010). In another view of point participation has been change into over-simplistic evolutionism models. It is blind to historical and social context and the importance of path dependency. It means that participation function is 'incorporating' rather than empower participants (Jupp 2008). Despite these critiques, main critic are presented by Christians and Speer Cooke and Kothari (2001) Christians and Speer (2007),Tsouvalis and Waterton (2012).

Cooke and Kothari (2001) belive that first, decision-making control held by agencies and funders. Second, the emphasis on participatory practices obscures many limitations and manipulations that suppress local power differentials. The third form of tyranny addresses the dominance of the participatory method, noting that the overwhelming acceptance of participation, particularly the goals and values expressed, has limited dialogue and even consideration of other methods for cultivating development (Christians and Speer 2007). According to Christians and Speer the theoretical ideal of participation is not functioning as the tool for liberation and distribution of power but participation are described as largely maintaining existing power relationships, though masking this power behind the rhetoric and techniques of participation (Christians and Speer 2007).

Even though participation critiques and obstacles, gap between subjectivity and objectivity, it has too positive impacts that encourage practitioners to apply it in reconstruction. Impacts such as emphasis was placed on earthquake-safe knowledge at the grassroots level (Jigyasu 2010), a sense of ownership, reinforce their local capacities and resilience and empower their community (Sliwinski 2010), improve the community and the respective government agencies relationships, understand each other, trust to each other (Buchy and Hoverman 2000 ), mobilizing marginalized groups, ensuring that grassroots voices have access to higher levels of decision-making, strengthening existing processes and creating new ones, creating networks of nested organizations and institutions, and nested deliberation processes (Robinson and Berkes 2011 ), emergence of a vibrant, heterogeneous, agonistic and lively group, create and critique relevant knowledge (Tsouvalis and Waterton 2012), to operational cost and time reduction, and reduce the negative psychological impact of earthquakes (Ophiyandri, Amaratunga et al. 2008).

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## 3. Research methodology

The systems approach and life cycle has been applied simultaneity in this study in order to present participation in post disaster reconstruction. The systems approach allows a comprehensive and cross-disciplinary view of the many apparently separate facets of a complex process such as post-disaster reconstruction.(Johnson, Lizarralde et al. 2006). The life cycle development process seen as holistic view of point that pay attention to all aspects of the life cycle of a product. "life cycle development' is defined as the sequence of activities needed to completely define a product life cycle" (Umeda, Takata et al. 2012, p.682.)

In the systems approach according to Johnson, Lizarralde et al. (2006) two main sub-systems identified in the systems approach and the reconstruction process: (i) organizational sub-system that includes elements regarding 'who is to do what' and (ii) technical sub-system that includes elements regarding 'how' to consume the resources.

In the life cycle process, disaster assumed as a product that effective disaster management required participation of all stockholders. The life cycle of a managed disaster divided into phases, start at the same time the disaster begins. The life cycle includes restoration and reconstruction of facilities, services, and human resources to a quality, reliability, security, and survivability level equivalent to at least the same risk level as that of the pre-disaster situation. The life cycle ends with a process and vulnerability improvement phase intended to prevent or reduce the impact of a similar disaster and improve the management process for use in future disasters. (Houck, Kim et al. 2004). Post-disaster reconstruction is a complex process involving a number of interrelated activities. The level of complexity will vary, depending on the scale and nature of the disaster and the corresponding response of the population and the institutions involved. Different project cycles are likely to be occurring simultaneously at different levels and for different purposes wherever people are organizing some element of the response. (Jha, Barenstein et al. 2010).

Due to nature of disaster and local condition different managed disaster life-cycle model is presented (Alexander 2002; Sharma 2004; Moe and Pathranarakul 2006; Huggins 2007; Shaluf 2008; Collins 2009; Diwan 2010; Coppola 2011; Paul 2011). For example Moe and Pathranarakul state: "Disaster management includes generic five phases, namely :( 1) prediction; (2) warning; (3) emergency relief; (4) rehabilitation; and (5) reconstruction. (Moe and Pathranarakul 2006). Coppola identified comprehensive four-phase approach disaster management. This approach contains four distinct components: mitigation, preparedness, response, and recovery (Coppola 2011). The necessary stages of reconstruction distinguished by Lizarralde, Johnson et al. (2010) as: project organization, project financing, project design and project construction/ implementation (Lizarralde, Johnson et al. 2010b). But complete actions and activities commonly performed in the recovery period of a disaster include:

- Ongoing communication with the public
- Provision of temporary housing or long-term shelter
- Assessment of damages and needs

- Demolition of damaged structures
- Clearance, removal, and disposal of debris
- Rehabilitation of infrastructure
- Inspection of damaged structures
- Repair of damaged structures
- New construction
- Social rehabilitation programs
- Creation of employment opportunities
- Reimbursement for property losses
- Rehabilitation of the injured
- Reassessment of hazard risk (Coppola 2011).

Life cycle of disaster in Iran is a little different from. First of all reconstruction focus is on reconstruction of houses and secondly the life cycle of disaster differs from one disaster to another, but mainly process are:

**a.** Organizational subsystem that include:

- Shaping Steering Committee
- Establish organizational and administer branches in area
- Establish technical supervisor office
- Establish financial and construction material distribution network

**b.** Operational and technical subsystem Includes:

- Communication with the local community
- Damage assessment
- Provision of temporary housing in some cases
- Demolition of damaged structures and disposal of debris
- Rehabilitation of infrastructure
- Design house plans in participatory manner
- Choose technical supervisor for any building
- Pay financial and construction material aids Construction

http://dx.doi.org/10.5772/55004

## 4. Case studies

Iran has been experienced devastated earthquake in recent years. Gilan & Zanjan 1991, Bam and Baravat 2003 and Lorestan 2006 seismic activity were more wreckers among others (Fig. 1). Therefore the most important reconstruction project allocated to these areas in Iran. Participation in any area will discussed separately.

### 4.1. Gilan and Zanjan earthquake (June 1991)

On 20th June, 1991 at 00:30 AM (local time) a disastrous 7.3 Richter earthquake jolted an area of over 600000 square kilometers. The epicenter was near the city of Rasht -center of Gilan province- leaving more than half a million people homeless, over 3000 villages devastated and about 15 cities damaged. Three cities and 700 villages were ruined. Estimated 40,000 to 50,000 people killed more than 60,000 injured 400,000 or more homeless remained, the Rasht-Qazvin-Zanjan area damaged extensively. Nearly all buildings were destroyed in the Rudbar-Manjil area(USGS 2010). Damages were incurred in three provinces, and some whole villages were completely buried in the huge landslides which happened as a side effect. Some towns also witnessed liquefaction and thus, sustained great damages.

### 4.2. Bam earthquake (2003)

At dawn on Friday, December 26, 2003, at 5:26:57 local time, a devastating earthquake with a focal depth of 10 km from the earth's surface and a magnitude of 6.5, hit the 2,000-year-old historical city of Bam and the town of Baravat as well as their surrounding villages (Ghafory-Ashtiany and Hosseini 2008). According to the official reports, more than 30,000 were killed and about 25,000 injured. More than 80% of the town's buildings were also destroyed. A total of 39,361 urban residential and commercial buildings in Bam and Baravat, and 32,400 rural units in over 250 villages suffered damage (HFIR 2009). The earthquake left 70,000 people homeless (Eshghi and Asheri 2005). Although the Bam earthquake had a devastating effect on the country's economy.

After the disaster, Bam's reconstruction management process was faced a lot of challenges and fundamental questions. The number of casualty and related social issues, extensive destruction of the historical town, and also the lack of good experience in the reconstruction of a city made the reconstruction project of Bam more complicated. The reconstruction of Bam was the most important post-disaster reconstruction project among recent reconstructions in Iran. Many factors, such as concern over the government and international agencies, the new managerial approaches, and the application of appropriate reconstruction methods, made it different from the other reconstruction programs.

It provided useful experience and lessons about post-disaster reconstruction programs. The reconstruction of Bam was the first experience for Iran in the reconstruction of an extensively damaged middle-sized city with a high rate of human loss and destruction.

### 4.3. Lorestan earthquake 2006

On 30 and 31 March 2006, a series of earthquakes ranging from 2.8 to 6 on the Richter scale hit different parts of the southwestern province of Lorestan. The strongest ones hit Doroud and Borujerd districts which incurred some 2000 injuries and 72 casualties as well as serious damage to over 35 000 houses and physical infra-structures in the area. This earthquake led to relatively small number of casualties and deaths. Because the community's positively response to the alert system, utilizing loud speakers and pick-ups, which was triggered by local authorities following the early strikes of the quake in order to evacuate the residences prior to the major shock of 31 March. At least 60 villages were completely destroyed and nearly 320 villages experienced damages from 10% to100%. Although the loss of life was less than similar disasters like the earthquake in Bam 2003 and Gilan and Zanjan 1990, the building and infrastructure damages were assessed high.

In the recovery process, the government didn't support from the intermediate phase of "temporary settlement". This was due to the favorable weather conditions and because most of the residents of Lorestan province participated well in reconstruction process. Consequently, people moved directly from emergency shelters into the permanent ones.

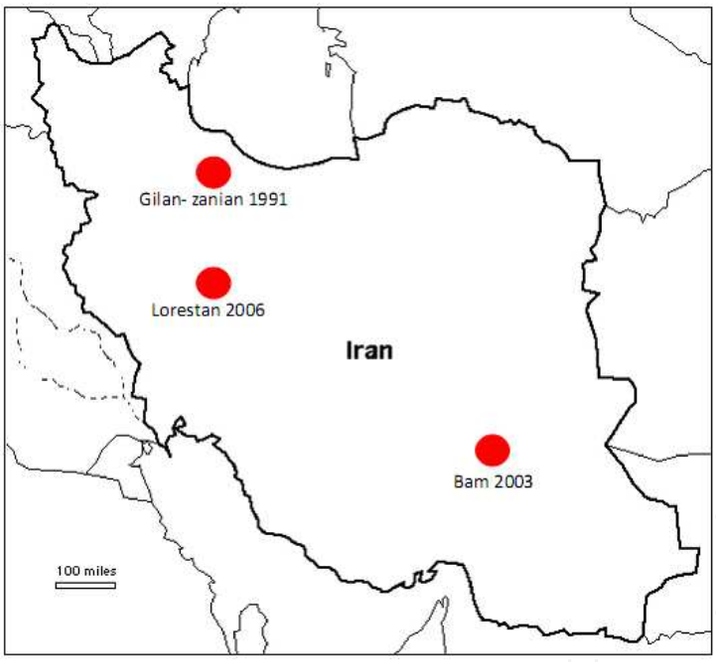


**Figure 1.** location of study areas in Iran

## 5. Gilan and Zanjan reconstruction

The reconstruction had a pyramid structure in Gilan and Zanjan. A headquarter was established as central office and destructed area has been divided into 17 subarea. Any part had its

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especial corresponding that ware called Setad Moin (SM). They were HFI branches throughout the country. HFI has been chosen as main executive of reconstruction but other organizations, NGOs and individual participated in reconstruction. Main participation policy was adopted as follow:

House owners are construction manager and they are responsible for design and implementation of their houses. The role of government is participation in affairs that house owner couldn't carry out their duties.

SMs divided damaged villages into four categories:

1. Villages that should be replaced due to geological instability.
2. Villages with relatively high destruction, they need to prepare rural physical guide plan. Reconstruction should be started after approval rural physical guide plan.
3. Villages with relatively medium destruction, house reconstruction permission issued based on rural physical guide plan.
4. Villages with partial destruction, some houses need to repair and limited rural houses need to rebuilt.

Reconstruction began after the establishment of Representatives Headquarters on Rural area. The first step was the removal of debris that people were involved. Simultaneity small unit as contemporary shelter were built. It changed to core unite of residential house for further development in some area. Small rooms that called "Fabian" distributed among damaged people. But most important once was the financial help to any family to build their building. Concurrent some basic material of construction distributed between households. It helps people built their own house based on their wants and needs.

People were dividing in to three groups including: farmers, ranchers and tenants based on their livelihood. The housing units were designed and built that it emphasized on the residential function. The socio and economical function of house were ignored in rural areas. Therefore majority of residential units that were designed and built by HFI with original plans were different. They looked at houses as one dimensional factor. Base on this approach they had a pre assumption that house is only as a dormitory. But the traditional houses were a part of socio-economy life. This assumption led to abandon the proposal plans by people. The main point was that villager livelihood was too important, but it was ignored by architects.

In first category of villages' classification, some of villages were displaced. Some of villages were mixed to gather in this procedure. This was done without people participation or limited participation and enough studies. It led to some conflicts and problems over the time in result. The second step villages' plans have been designed on pressures of time limitation and cold season. Local people didn't play critical role in this phase too. Therefore village plans was too simplified and it did not adopt with socio-economic and spatio-locational needs. Unadjusted plans led to other problems again.

The traditional houses were made of mud brick and wooden roof in north stricken areas of Zajnan province. HFI proposed a kind of construction using concrete frames and brick walls. This model had serious differences with the traditional model. Thus it needed a capacity building movement. The following methods were used for training villager:

- Classic training for related organization employee
- Villager training by Show Maquette, Pictures and posters, slide shows and maps in rural areas.
- Pattern building by construct a sample house in target villages.

In this project the HFI tried to organize some groups in some area as facilitators, calling "rural councils" in addition. In this region, the people transmitted their problems in each phase of the reconstruction to the rural council, who conveyed these problems to reconstruction authorities. This trend helped to accelerate the reconstruction process. The rural council was so useful in order to make effective relationships between authorities, designers and peoples.

The first method, due to: unknown result for volunteers; duration of courses in long time; voluntary refusal; lack of facilities for organizing their effort; was not effective. Second method was not successful too based on the lack of a common language among the educated elite and rural people. Final method HFI needed technical team that did not exist. The technical team was formed by HFI. These groups were sent to rural areas. HFI was responsible for the construction of housing units for households with orphans at same time. Therefore HFI constructed houses with new structure and form with technical assistance team. The houses were converted into sample units. This final method was more successful than previous two methods. Temporary housing units were made in sizes of 15 and 35 meters in Tarom Sofla area. These units as temporary accommodation units changed into the core unite for further development of residential units. This was an innovation in construction that presented by Esfahan branch of HFI. Over 190000 residential units were constructed, reconstructed, or repaired on area.

Various building materials were distributed with discounted, subsidized prices. Building materials were subsidized by the government in order to cope with rising prices due to increasing demand. Materials production was promoted too based on enabling approach. Long term, low interest loans were distributed through mobile or permanent banks. About 700 houses were built as a sample of safe construction and were donated to poor families. As a further contribution, over 50 schools and 17 health houses were built in various rural centers on behalf of national or international donating bodies.

## 6. Bam earthquake (2003) reconstruction

Bam reconstruction needs a new reconstruction strategy and efforts based on the previous experience and greatness of event in Bam earthquake. Shaping Steering Committee is the first

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action in order to start reconstruction process for first time in Iran. Bam's reconstruction Steering Committee established as the singular leading and policymaking association. Bam's reconstruction Steering Committee and policy making was responsible for the planning, provision of financial resources, policymaking, executive operations, and supervision. The Steering Committee determined the responsibilities of each administration and commanded the organizations duties clearly, thereby preventing the likelihood of a duplication of effort relating to the Bam reconstruction. On the other hands, each organization and ministry continued to fulfill the responsibility that it had before the occurrence of the earthquake, and a supervisory association was responsible for the inter-organizational cooperation.

The committee was headed by the Minister of Housing and Urban Development and the head of the Housing Foundation of Iran (HFI) was also in charge of executive affairs (Omidvar, Zafari et al. 2009). Bam and Baravat were divided into 11 zones and rural area into 9 zones based on previous experience, and to use the maximum available potential in reconstruction. In each zone, an executive quarter was organized and mobilized.

Up to 97% debris of the destroyed units in Bam and Baravat were removed by March 18, 2006. The operation of removing debris was started after the confirmation of the unit's ownership. In this phase participation was manifested. People were participated in debris removal by separation and restore usable materials like bricks iron profiles and etc. They received about 80 us $ per family for their participation. This amount was paied in order to attract and encourage people participation. This policy had useful advantages that could be counted as:

Due to psychological condition of people (due to the loss of their family members), any physical activities could be cause psychological rehabilitation;

Recycling of materials and reuse of materials and reduce need to new construction material;

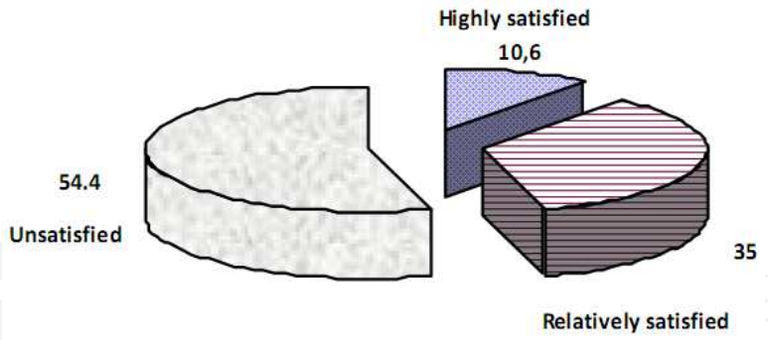
Owners Presence in demolish structures helped them to get out their goods and equipment especially valuable commodities like gold. It helps to reduce legal conflicts between residents;

Finally financial helps, empowered family economically, especially in post disaster condition.

Field survey shows that only 10.6 percent of people were satisfied from this kind of helps. 35 percent relatively were satisfied and 54.4 percent thought that the amount of financial helps were less than their needs (Fig. 2) (Zafari and Darabi 2012).

In this project, choose a proper design has been seen as a people right. House owner were able to choose appropriate style of architecture, structural system, construction materials. They choose their primary layout and they refer to an architecture council. Council was provided a complete detail of plans based on residents' opinion. During the reconstruction process up to 136 comprehensive plans covering 29,964 rural units were prepared. They were able to choose a technical executer contractor.

The Bam Reconstruction Steering Committee and Policymaking formed a council called ''Bam's architectural and urbanization council'' to preserve the identity and character of Bam and monitor construction process. The council regulated the architectural regulations. For this reason, some of the country's best consultants were selected for controlling the architectural regulations in every phase.




Source:(Zafari and Darabi 2012)

**Figure 2.** people satisfaction of financial aids

In case of retrofitting and also structural controlling, the government signed a contract with construction engineering organization, as a Non Governmental Organisation. This increased the participation of local organizations. Furthermore, the participation of contractors and executive teams were increased by providing educational opportunities to prevent the use of improper construction materials in the buildings, and also some contracts were signed to build soil mechanics laboratories(Omidvar, Zafari et al. 2009).

The government provided construction materials for the owners. Owners were received low interest loans for reconstruction. They received this loan in three parts according to physical building progress. People were constructing manager and they decide for themselves in construction method. All these activities were carried out after the building permit was issued. Finally, based on a survey conducted in 2008 by Omidvar and et al., it was found that the maximum of public satisfaction was occurred in the architecture design plan preference and construction contractor selection process. (Table 1) (Omidvar, Zafari et al. 2009).

| Subject | high | moderate | low |
|---|---|---|---|
| Construction Contractor selection | 45 | 34 | 22 |
| Building Material selection | 34 | 57 | 9 |
| Architecture design plan preference | 45 | 30 | 25 |
| Debris Removal | 10.6 | 35 | 54 |
| Reconstruction Operation | 37 | 45 | 19 |

Source: (Omidvar, Zafari et al. 2009)

**Table 1.** People satisfaction from Participation in reconstruction process (Percent)

## 7. Reconstruction of Lorestan

The HFI was the responsible of residential sector reconstruction like other reconstructions. Damaged area was divided into 8 parts that one SM was responsible for any subarea. Also,

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numbers of expertise were invited from HFI branches to help the SM. The reconstruction was started in Brojerd city and in villages simultaneously. The procedures in two areas were completely different.

Urban reconstruction was assigned to the municipality of Broujerd. Municipality had enough information about ownership and it could help prevent a potential further conflicts. All reconstruction affairs were did by house owners from debris removal to build houses. In many cases, damaged houses were in old structure of city that organic access network. Organic networks limited car access. Another problem referred to neighborhood. According neighbors safty, debris removal must be performed more accurately and without creating problems like dust and noise for neighbors. Only house owners could do it with care. Thus their participation was vital in reconstruction procedures. In some cases people look at disaster as opportunity for development. Earthquake was a chance to renew old urban context. A residential unit that was resisting for the opening of narrow street, was destroyed by the people. An important work that the municipality was unable to do for six years.

All other works have been done by people and their participation. Government and HFI provided the necessary funds for the reconstruction. The loans were paid to people after municipality approval and assistance of the banking system. In other aspect HFI was acted as council and assistant for solve peoples' problems. It was for first time that all works done by people.

In rural area reconstruction followed traditional method. But in Lorestan earth quake role of reconstruction responsibility was limited to management in compare with previous ones. Therefore main role in this subsystem referred to local people. According to previous experiences, the most important factor to participate people is the right of people to choose their houses layout. In this case people could choose the plan that was prepared by consultants. In order to improve the quality of houses planning, diversity of plans was prepared based on local residential needs. On the other hand, it was possible to people to design a new layout. About 12 consultant groups have been added to existing expert teams in Lorestan to expedite the designing, retrofitting and reinforcement of damaged units. Rural Engineering System (RES) formed after Bam earthquake. Presence of RES was most important point in Loerstan reconstruction. RES main job was monitoring the construction process by technical assistants and offered technical consultation to house owners in building process. Naturally in design process people took main decisions but it came to truth by RES members and HFI experts that were at villagers access.

The HFI was responsible for distribution low interest loan. It delivered building materials too. The local potentials for production of standard building material were identified and activated in the early days of the disaster. Several quality control systems have been created. This system tested samples of building material regularly. To increase accessibility, representative offices were set up in villages that also provided workstations to banks, which facilitates the administrative process (Zafari & Jodi, 2009).

It was clarified that the reconstruction scheme offered two options, the affected individuals could either take monetary compensation and acquire building material independently or HFI made it by providing low cost building material in lieu of the monetary Loans.

Financials polices changed after bam earthquake. In suitable reconstruction condition, limit financial aids change to complete finical loans to reconstruct permanent buildings. The main task of reconstruction return to home owners and HFI presented housing materials and construction management. RES offered technical supports to the people and constructers.

Local people roles were changed to main responsive of reconstruction based on mentioned policies. New polices emphasized on employment of local people beside the reconstruction. Therefore 15,261 units were repaired that home owners were main participants in repairs. More than 37,000 residential units were constructed by contribute of home owners. About 17000 residential units in the urban areas were reconstructed based on this view of point.

People participation was divided into two steps in Lorestan reconstruction including: the first step was decision making, decision taking, and planning. HFI tried to use public participation in all phases, such as through policy making, operating assessment and revision. Then, they held meetings with the public before preparing files and tasks. In some conditions in which it was necessary to relocate some villages. The area's mangers held meetings with the people after doing initial studies. The second step was reconstruction management. People participated in important tasks effectively like material distribution, removing debris, putting walls up, and roofing. The reconstructing management delivered directly to people and HFI and other authorities acted as a conductor and supervisor.

Quick review of reconstruction and participation role in three earthquake show: Participation has been a lot of volatility in reconstruction. General point is that participation in reconstruction has become more and more acceptable issue. But a kind of especial view of point dominated on it.

In first earthquake participation was a minor issue. Participation is visible in deferent step of reconstruction. There are neutral or negative image of participation in reconstruction authorities attitudes. In Gilan and Zanjan reconstruction people in many step of reconstruction acted as bystander in some cases they tried to modify reconstruction decisions. In some part they were as supervisor of reconstruction authorities. Participation is visible but partial and it completely depended on SM managers' attitude. In some cases participation has been occurred but it was an attempt to solve conflicts.

In bam participation is as main issue in reconstruction. People found a significant role in reconstruction. Foreign efforts like United Nation Development Program, other organization, people and NGOs intervention were effective to figure new form of participation. In Bam reconstruction for first time participation found new meaning in Iran. People found a good opportunity to reflect their wants in reconstruction practice. It shaped a triangle from government, people and technical assistants. It created the idea of RES for rural areas and made tasks of government lighter. People found their responsibility for this homes and building from debris removal up to construction.

http://dx.doi.org/10.5772/55004

In Lorestan reconstruction participation cycle were completed. In this cycle in all related phases people found their roles. Participation change into accepted issue and RES worked properly. In this reconstruction temporary shelter and small financial aids were omitted and long term loans were replaced instead. Reconstruction of residential houses was a task of normal people. Distribution of loans have been helped to empower local society. Distribution of construction materials have been done by some of local dealers. In this construction role of any side of triangle divided professionally and participation found the proper shape in all reconstruction efforts. More important point was the time of reconstruction in Lorestan. Reconstruction has been finished in about 6 month. But all efforts were limited to the reconstruction cycle and with ending the reconstruction and exit the reconstruction authorities from area, participation stopped and all structures collapsed. Unfortunately all efforts were done for reconstruction and it did not become institutionalized in area as an opportunity for further development.

## 8. Conclusion

Even though participation faces with some critiques and obstacles, but advantages of participation make it attractive for governments and reconstruction managers. A short review in three earthquake reconstruction policies in Iran shows that despite of compliance limited participation, the attitudes have been change over the time. Factors such as greatness of damaged area and budget limitation, local people actively involve in reconstruction, reduce responsibility of reconstruction authority, increase the reconstruction speed, Work division and less conflicts between organization, and less parallel or duplicated works are the result of people participation.

Although participation was not a main reconstruction policy today it has major affect on reconstruction policy. People participation led to new configuration in reconstruction management in Iran. New reconstruction management changed role of government from self reliant to a local community protective. But it is too far from real community participation in post disaster reconstruction. Although people play relative good role in construction but it need to change a process of capacity building and empowerment that is durable over the time. Unfortunately participation imposed due to deficit that will create by disaster. Based on origin of life it does not change into an institutional structure and it its continuity completely related to political structure of governmental organization. Therefore it can evolve quickly by managers' decision in different level. The main challenge arises here is: How can we institutionalize participation which is not affected by individual decisions and political change?

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