

## **Crisis Management and Vulnerability of Deteriorated Areas of Tehran city (Iran)**

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**Abstract.** It is counted as one of top ten countries with the most catastrophe occurrences, and at present more than %60 of its population live in urban areas. On the other hand, most cities especially greater city of Tehran, are situated in areas which are not safe from catastrophe occurrences and earthquakes. Studies show that unstable land area in Tehran is about 1472 acres, and of this value, the deteriorated included in reconstruction plan is equal to 3268 acres of unstable, and in penetrable housing. This area which great section of it is located in south part of Tehran includes historical buildings, and secondary and unofficial habitat. In general, different methods of reconstruction of deteriorated urban applied to this date includes less than %10 of this area. This is while according to fourth and fifth city of Tehran development plans and other up grading documents %10 of this area should be reconstructed annually. The actions being taken are based on four goals: First safety, second coordination, third revival, and fourth capacitating. The results of this study show that earth quake threatened areas are mainly coincided with deteriorated urban and this condition intensifies crisis management at the time of any catastrophe occurrence which requires different operational plans, and modification of aid reception availability.

**Keywords:** Tehran, Vulnerability, Deteriorated Urban.

### **1. Introduction**

Unoperational and deteriorated texture of Tehran city is sides their history of habitat and method of formation have the same characteristics. Analytic study of this region shows issues such as: Lack of proper structural frame in buildings, unavailability of roads to trouble areas, and improper passages, buildings concentration, small land distribution pattern, low regional service, population concentration, accumulation of incompatible applications of hesitance, and lack of valuable utilization govern this area. As a result Tehran is facing a double jeopardy condition by any natural catastrophe occurrence there is no proper operational crisis management available (tagvaei et al 2006). It could be said that almost a great number of these habitats in this region are unstable in case of earthquake, and habitants of this region mainly have low income and their share of municipal services is extremely lower than applied standards. And the most important issues in case of a crisis are: death toll, and irreparable damages and costs due to an earthquake (mansouri et al 2008). The relationship between city texture and social living, and its vulnerability shows the importance of operational interference in renovation.

### **2. Discussion: Evaluation of deteriorated texture of city of Tehran**

There are different characteristics in identifying deteriorated urban that could be considered. Tehran's city hall has considered there characteristics, instability, impenetrability, and small land distribution which are standards to identify deteriorated of city blocks (andalib, 2008). An unstable block is a block which at least %50 of its buildings does not withstand forces of nature and lack proper structural system. An

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impenetrable block is a block which at least %50 of its passage ways is less than 6m. Small housing block is a block which at least %50 of its land area is less than 200 m<sup>2</sup>. The importance of instability characteristics in evaluation of vulnerability of deteriorated of Tehran city against earthquake and population of three millions in this part has made this area one of the most vital issues of Tehran city. And necessity to consider reconstruction plans from as set of city management great actions is inevitable.

On the other hand concentration of city blocks in south and central areas of city represents and extreme kind of development on the basis of land separation and increasing job opportunities that has been formed in framework of capacity foundation network at the time (mansouri,etal,2008).

Table 1: instability, impenetrability, and population dispersal and habitat units characteristics.

Identification characteristic of deteriorated area	Area acres	Block	Habitat units	Population
Un stability, un penetrability and small size housing	2582	5035	264927	1164944
Un stability and un penetrability	2861	5346	278083	1211761
Un stability and small size housing	6512	10852	535102	2452939
Un stability	11092	14052	640192	2906278

These are as in present condition, in order to survive and attract different city life opportunities; they have no choice but to experience a new form of development and reconstruction. In comparison to other city regions deteriorated characteristics such as: vital statues, operational and services, and moving, social, economic, and environmental foundation of city in this part of Tehran is so undesirable. Comparison of rate of operation in this part to average rate in Tehran reveals a great difference. Lack of greenery in this part and high rate of habitat comparing to average rate (twice more), is a reminder of necessity to decrease this rate for the sake of tree growing area and greenery and city services, and moving, social, economic, and environmental foundation of city in this part of Tehran is so undesirable. Comparison of rate of operation in this part to average rate in Tehran reveals a great difference. Lack of greenery in this part and high rate of habitat comparing to average rate (twice more), is a reminder of necessity to decrease this rate for the sake of tree growing area and greenery and city services, and dispersal of habitats and regulating population in this region.

Table 2: comparison of main operational rate of deteriorated area to average rate of Tehran

Operations	Decadent	Texture	City average		Recommended nos.
	%	No.	%	No.	
Habitat	49	18.8	24	22.8	20.9
Greenery	4	1.4	8	8.2	9.1
City services	5	2.1	6	5.9	10.9
Passage way net work	27	10.5	19	18.1	24.8

The percentage of issued reconstruction permits to all available living habitats show that this decadent area of the city which don't have a systematic passage way, could participate in reconstruction process. Extensive reconstruction plans in 7,8,10,11,13,14, and 16 municipal regions show the effect of different city project such as completion of high way net works on rapid reconstruction process (ebadati, 2007).

### 3. Renovation Strategy

By considering international, national, and regional roles of city of Tehran that requires proper city environment, and reconstructed and strengthened decaying buildings to face jeopardizes, and crisis specially earth quake (andalib, 2007). It's main goals and operational modes are as followed:

#### 3.1. First goal: safety

For this purpose, enhancement of city safety factor and lowering vulnerability levels of old buildings against earthquake and natural and fabricated catastrophes are considered. The following operational and instructional modes are considered to achieve this goal:

- 1- Extension of reconstruction operation area- inclusion of reconstruction in all decision making are as, planning and allocating budget, specially supporting reconstruction actions with people cooperation in local levels.
- 2- Establishing reconstruction in the city – Applying the most reliable methods of planning and operation in and maintain a stable reconstruction process, avoiding choice actions, and sectional and hasty plans by emphasizing reconstruction culture in people and increasing people participation.
- 3- Developing construction safety standards – utilizing standard construction materials, careful supervision and monitoring operational actions, requiring quality structure, reliability and earth quake in surfaces in reconstruction.
- 4- Developing new construction technologies – utilizing industrial and half industrial methods of supplying and applying economic, fast high quality and strong construction materials.

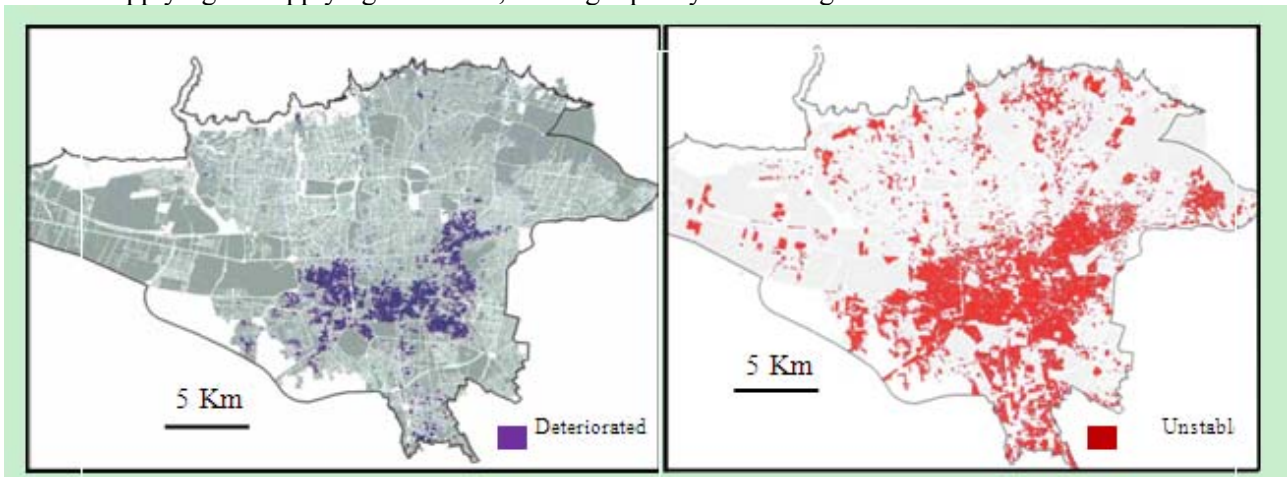


Fig. 1: distribution of blocks with three parameters of deteriorated in Tehran city

Fig. 2: distribution of blocks are unstable in Tehran city

### 3.2. Second goal: regulating

For this purpose, making equal opportunity to grow out of a bauble jeopardy situation, and inequality by entering the deteriorated into city life cycle (economic, social, etc...) and try to halt poverty, enhance living quality, and attaining social justification, are considered to achieve this goal four operational and instructional targets are considered as followed:

- 1- Equal dispersal of population: Decreasing population in decadent area by planned transfer of population to restored reconstructed region with lower concentration of population.
- 2- Equal distribution of potential municipal services: De concentration and distribution of activity centers of big city to different parts of city by developing municipal services in decadent area and required foundation of reconstruction development in this area.
- 3- Distribution of equal opportunities: Organizing a justified city ordinance (population, activity, networks and etc...) and enhancing residents capabilities (education, providing job opportunities, supporting and presenting services) of decadent area by varying concept of city land management in considering land as a public resource, and common wealth for present and future generation.
- 4- Improving quality of human environment (habitat, and activity) Balancing levels of habitat application and municipal services, and increasing habitat foundation, remedy social problems and decreasing welfare inhibitions, and public security of residents, specially conducting valuable application to decadent area(khakee,et al, 2000) .

### 3.3. Third goal: revival

This purpose could be achieved by creating joy, and blowing fresh breath to life and spirit of decadent area of the city. It is necessary to make participation of residents in revival of their own living and activities and environment interesting. Strengthening their sense of citizenship and belonging to different and

meaningful domains of city such as different locations, and using identity characteristics and elements by maximum participation of residents of this area is necessary to achieve this goal (andalib, 2007).

This purpose could be attained by utilization of following operational goals and their application:

- 1- Redefining reconstruction commission: Considering all measures of social, economic, environmental and reconstruction as parts of this goal, and avoiding a mere engineering technical frame work perspective, and emphasize on a reconstruction action as a process, not a civil project.
- 2- Enhancing city characters: Strengthening cultural, and tourism characteristics of decadent natural and historic sights, and determining a constructive role for these areas, specially historical textures in city environment, and organizing a city perspective by utilizing Iranian- Islamic architecture principals.
- 3- Developing local – oriented reconstruction: Recognizing local limits as a meaningful domain of city in management, decision making, planning, designing, offering service, and other areas along with maintaining maximum number of local residents in reconstruction process of decadent texture.

### **3.4. Fourth goal: making capacity**

To make capacity, it is necessary to use all measures and opportunities relevant to its national, regional and international role. For this purpose the following operational goals and applications would help to achieve this goal:

- 1- To develop and to strengthen science campaign application in renovation management: Avoiding passivity and routine ness by applying active management to create and revive current methods and available principals, emphasizing on sincere principal of offering service to the people, and fully utilizing all of the capabilities by creating a process relating to scientific, campaigning, and operational actions.
- 2- presenting new renovation patterns (making pattern) : Making pattern in all subjective and location dimensions of renovation by creating a competitive environment, and supporting ideas and creative groups in reconstruction, emphasizing on enhancement of place of city of Tehran decadent texture renovation as model for other cities in the country.
- 3- Strengthening futuristic and applicable perspective to renovation: Emphasizing on importance of time management in reconstruction and considering stable and long term effects of cost- benefit reconstruction, and guiding city enterprises to deteriorated, and creating and guiding activities in national dimension to these are as, briefly, reconstruction organization of Tehran city in past two years, in order to achieve these goals, has applied all the above related applications in a frame work diverging from these goals and application. It is recommended that in order to maintain harmony for, and action with respect to reconstruction of deteriorated areas, the above goals to be considered and all the actions to be applied and evaluated in this framework. Otherwise, all the efforts and actions would fall into a passive and routine mode, and personal taste of management, and fragmented encounters, and would lose its effective ness.

## **4. Conclusion**

Considering what was expressed, it seems like that by regarding to respective chain of plans for city development; the available application of city management is not able to respond to complete reconstruction of deteriorated areas of Tehran. It requires different hasty and applicable plans for unstable areas of city, considering components of crisis management, these applicable plans could be referred to, such as: selling new built houses by metric area, land possession by city municipal, replacing old houses with new ones, financial aid along with granting commendatory permits in decadent area and people participation and sharing city projects, and other actions in extension of above plans that are achieved by operational organizations with respect to their application importance in potential services, includes developing main high ways, strengthening city establishments, and networks and safety of governmental buildings in deteriorated areas of city.

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