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Integrated Management of Urban and Rural Crises (Challenges and Solutions)

Seyyed Arash Sohrabi
Department of Education, Construction Engineering Organization of East Azerbaijan Province, Iran
*Email: arash.sohrabi85@gmail.com

Abstract

Man today sees the future horizon farther than yesterday, and maybe because of this, his challenge has increased. Despite having a broad vision and the progress of science, he is incapable of predicting the time of crisis, today's cultured person uses the knowledge of crisis management, and what can lead him to continuous improvement is attention to process management. In the new paradigm, the approach to improving processes and systems is a scientific approach that is considered the philosophy and principles of comprehensive quality management. The important features and shortcomings of the Najaf Abad region, which are obtained from the analysis of the current situation and its developments, can be summarized in the following cases: Failure to deal with the Najaf Abad region as a single element, considering the integrity of the elements of the region. The economic imbalance between Najaf Abad region and other regions of the province has led to a heavy migration to Najaf Abad city, to unstable hierarchical system of population settlement in the region and severe population difference between Najafabad and other cities in the region. It created also the imbalance between population growth and physical-economic development of Najaf Abad city and has led to non-compliance with the master plan for the development of Najaf Abad city.

Keywords: Crisis, integrated management, earthquake, Najafabad.

Introduction

The issue is the criticality of the urban areas of the country and the study of the role of integrated urban management in the matter of natural disasters .If we consider urban management to be the creation of mechanisms for the administration, protection, and protection of the city and citizens in an optimal way, then the goal of urban management is to create the necessary platforms for the optimal development of the city in various social, economic and physical dimensions in the future according to the current situation (Sadigh Sarabi, M., et al., 2024. -d). But when the discussion of integrated urban management comes up, it means that all the organs and organizations that are effective in organizing and urban ecology must be under the supervision of integrated management so that they can run the city in a balanced way and away from inconsistencies and duplications. Create a peaceful and livable environment for citizens .In other words, if we compare the city to the human body, which has different organs, all the organs must work under the management of a thinking and integrated brain to ensure human life (Bayulken et al., 2021).

Urban management should have a structure that connects the collection of living parts of the city. This structure should create a proper relationship between all the living elements of the city, people's groups, organizations, and governmental and non-governmental organizations. So, if such a structure is formed, then integrated urban management has been achieved. The region of Najafabad is located in the structural divisions of Iran in the Sanandaj-Sirjan zone, and there is always a possibility of an earthquake in this zone. In addition to the geological situation of Najaf Abad City, many other factors have increased the probability of a crisis in Najaf Abad City (Schröter et al., 2022). Vulnerable variables such as increasing population density, unbalanced distribution of facilities and

services in some areas of the city, the emergence of slums and slum dwellers, and physical disorders (urban density, uncontrolled urban development), which, if continued in the future, will lead to blind and insoluble nodes. Will and in case of such conditions, even heavy expenses and efforts of planners cannot improve the situation (Norouzian, M. M., 2024).

The logical policy of integrated management is usually a picture of basic measures to improve urban management against various crises. Among other factors that play a decisive role in controlling and containing the crisis in a country are the administrative organizations and political institutions of the government (Sadigh Sarabi, M., et al., 2023- a). The existence of multiple centers of power and decision-making in one system is one of the weak factors of a country in dealing with critical situations. This is due to the lack of integrated management, fragmentation, and lack of inter-organizational coordination, which causes weakness and defects in crisis management and citizen dissatisfaction (Naghibi Iravani, S., et al., 2024 -b). Therefore, according to the above explanations, the problem of this research is the quantitative and qualitative conditions and status of the physical space of Shahr Jaf Abad, which is one of the most important factors that have increased the city's vulnerability to natural disasters, along with the problem of the lack of coordination of crisis-related organizations in the city. The studied variables are the quantitative and qualitative characteristics of the houses in Najaf Abad city (including density, type of materials, etc.)

Theoretical

Catastrophe and natural disasters. Disasters are events that disturb the existing normal conditions and cause the affected society to endure suffering beyond its capacity. When the events are called disasters when humans are involved, the consensus is that there are no pure natural disasters, but these are natural hazards that affect the vulnerable aspects of humans. Events that occur in connection with nature, such as earthquakes, floods, droughts, rising seas, volcanoes, landslides, natural disasters, etc., are called natural events (Sadigh Sarabi, M., et al., 2024. -a). Understanding these phenomena requires multi-disciplinary studies due to their multi-dimensional nature. Any sudden, unexpected natural event that causes the weakening and destruction of economic, social, and physical capabilities such as loss of life and money, destruction of infrastructure, and reduction of employment opportunities in the society is known as a natural disaster (Sadigh Sarabi, M., et al., 2024. -b).

In a simple sense, this concept refers to an incident or an event that disrupts the order of life, and a significant part of the population of a region or a city in a certain period (Gheitarani, N., et al., 2024- c). A disaster occurs when the cause of the disaster (accident) directly threatens the lives of individuals and communities or creates serious risks to their economy and social structures, in a way that threatens their survival (Karimimansoob et al., 2024- a). Certainly, various factors such as the scientific approach and attitude, the factors that create it, the magnitude and intensity of the incident, and the type of institutions responsible for dealing with its consequences, are involved in the variety of definitions of this concept (Batista et al., 2021). The origin of the concept of crisis. The root of the word "Crisis" is from the Greek word "Krinein" which means a turning point, especially in the case of disease, and it also means a time of danger in terms of political-economic issues (Khanian, M., et al., 2013).

At the same time, the crisis is considered a sensitive point, which may ultimately result from a suitable or inappropriate transformation. Like life and death, balance or instability. Crises are different in terms of nature, size, and severity, but all of them have consequences that can disrupt the functional ability of the organization or system (Hassankhani et al., 2021). Roberts states that: indeed, defining crisis is not a simple matter. Because this concept suffers from a semantic, technical,

operational, and consensus vacuum due to the nature of its inclusive productivity (Norouzian & Gheitarani, 2023). From the systematic point of view, a crisis is a situation that disrupts the order of the main system or parts of it that we call sub-systems and disrupts its stability. In other words, a crisis is a situation that causes a sudden change in one or more parts of the variable factors of the system (MM Norouzian & N Gheitarani, 2023).

In addition, crisis is not the only concept that can be used to understand a critical incident that occurred. Rather, many other concepts such as unhealthy management, economic and political instability, weak management, lack of expertise, growing population, lack of fair allocation of resources, etc., are somehow referred to this phenomenon (Aghazadeh, M. et al., 2017). Crisis is a popular term that seeks to find a scientific meaning. Some scholars use this term with the same meanings as pressure, anxiety, disaster, violence, calamity, or potential calamities. Some others consider this phrase as a turning point between a favorable and unfavorable transformation concerning the medical field (Norouzian M. M., et al., 2024).

Typology (typology) of the concept of crisis. The crises and environments that contain them are very different. In identifying and dealing with any crisis, its typology is a very necessary and unavoidable introduction. This important thing can't be achieved except by knowing (based on information) environmental variables and requirements or basic environmental relationships that have become the basis for the emergence and emergence of a specific type of crisis (Zaker Haghighi et al., 2014). From this point of view, it is possible to consider the causes and factors of the crisis, as well as the scope and levels in which the crisis occurs (either the spatial dimension of the crisis or different layers such as the affluent class, the middle class, and the low-income class) to an Effective and specific taxonomy, was achieved in this field (Zakerhaghighi et al., 2015).

In terms of causes and factors, crises are very different:

- Natural causes (earthquakes, floods, landslides, storms, etc.)
- Structural causes (weak management, inflation, economic failures, geographical position and time, etc.)
- Political causes (multiple institutions, etc.)
- Economic-social causes (economic problems, etc.)
- Cultural-perceptual causes and...

On the other hand, the definition of crisis is related to the quality of the managers' behavior, that is, their understanding of the trigger signs and their reaction to the trigger. In other words, in this framework, the crisis is a situation that:

- It threatens the vital goals of city management.
- It limits the reaction time to make a decision.
- It surprises the decision-making elements and factors with its sudden appearance (Sadigh Sarabi, M., et al., 2023- b).

So the three important factors that play a major role in defining and diagnosing a crisis are threat, time, and surprise (Naghibi Iravani, S., et al., 2024 -a). The important point in this point of view is the attitude and analysis of the quality of decision-making and work methods in crisis management. In addition, the behavior of individuals, individuals, or groups who are active in decision-making and crisis management is desired. Indexology (anatomy) of the concept of crisis (Norouzian & Gheitarani, 202). If we accept this principle that managing crises is only possible in the light of knowing the special order, logic, and legality of each crisis. Therefore, it is necessary to show the difference between normal incidents and crises through ideology, secondly, to introduce the classification and typology of crises, and thirdly, to help city managers determine the priorities, urgency, and crisis management method (Aghazadeh, M. et al., 2019).

In general, the indicators of a critical situation are:

- Jeopardizing the priority goals of urban planning.
- It requires extraordinary resources.
- The background of convergence is events that create new and unknown conditions.
- They need to make decisions under dire conditions and in limited time, relying on incomplete information.
- They have a long and depreciating nature and effects (Sudiantini et al., 2023).

A crisis can have a short or long time process, but without a doubt, this process is not endless and requires a high level of intensity of interaction compared to normal conditions, surprise is one of the other characteristics of a crisis (Norouzian & Sarabi, 2023). Integrated crisis management. Integrated crisis management is a synonym of the English word Tact, which means the ability to understand the situation, and the sensitivity of the situation, according to the situation, in the best possible way. In other words, integrated crisis management is the system and profession of applying technological knowledge, planning, and management to deal with unexpected events (Norouzian, M. M., & Sarabi, 2023). If there is no proper scientific and operational management in dealing with unexpected events, the human losses caused by disasters will be many times. Crisis management, like the concept of crisis, has been defined from different perspectives (Khanian, M., et al., 2019).

The conceptual-definitive scope of this word is very wide and includes every measure to avoid crisis, thoughtful search for crisis, and termination containment of crisis to secure national interests, etc. On the other hand, it can be said that integrated crisis management is an art through which planners and managers can show their determining role in their presence and absence (Gheitarani, N., et al., 2024- b). In this way, integrated crisis management can be defined as including the following:

- Institutionalizing crisis management and creating capable management in accidents and disasters.
- Internal and external coordination in the disaster management system.
- Improving the specialized knowledge of executive managers in the field of theoretical, educational, and research issues of crisis management by providing sufficient information to managers and improving their knowledge.
- Presenting plans and bills and proposing the approval of laws needed in disaster management.
- General and specialized information in preventing and dealing with accidents and disasters.
- Preparation of executive guidelines for crisis management in the field of health, treatment of accidents and disasters. Evaluating potential risks and ways to prevent accidents and disasters (Maleki, M., et al., 2024).
- Preparing society to face emergencies.
- Transferring experiences and criticizing the performance of the country's crisis management system in national crises.
- Due to this variety of definitions and the limited level of awareness in the field of crisis, policy-making, and managing crises is an incomplete, incomplete, and complex art.
- Crisis management has an urgent need for continuous monitoring and evaluation and development of decision-making and management criteria for action when it emerges. From one point of view, you define a system as an organizational combination of processes, functions, roles, structure, norms and rules, environment, and managers (Karimimansoob, V. et al., 2024- c).

Its continuity and stability coefficient depends on several factors, including the following:

- The ability of an integrated management system to maintain and stabilize the center of gravity or the factor of cohesion, stability, and legitimacy of its sector (through the continuous production and reproduction of stability and value rules).
- The precise definition of the elements (components) of the manufacturer and the processor itself is in the interwoven bed of mutual, organizational, logical, and functional relationships with each other. (Naghibi Iravani, S., et al., 2024 -c)
- Creation of productivity talent or the ability to be available (the ability to powerfully allocate values and resources at the community level and powerfully protect them against the events and threats of the times).
- Engineering of flexible walls and strengthening the capacity of digestion, orientation, or adaptation to environmental events and variables. The style and context of crisis management play an important role in determining how to achieve success (Karimimansoob et al., 2024- b).

There are two basic approaches in the field of crisis management, which are:

- Single-center approaches (based on the concentration of management and response to crisis in the form of integrated power) and multi-center approaches (based on the interaction between managers and having competition as a tool to ensure deterrence and proportional adjustment against the potential concentration of decision-making power). Integrated management in urban crises. Integrated urban management is a combination of management issues and urban planning, the purpose of which is to create coordination between the planning and control of urban plans and programs, in such a way that the compilation and implementation of these programs are done favorably (Kahvand, M., et al., 2015).
- Crisis management is like a battlefield. This field needs a control center that is composed of people who have good cleaning power and have the characteristic of making quick decisions and establishing effective communication with other organizations. Such a center analyzes the incoming information and chooses a concrete and precise method for operations (Gheitarany, N., et al., 2013- b).

However, this center can only work well when it has the power to make decisions, rather than just recommending actions that are not acted upon by the hierarchical structure of other organizations. If we expect optimal results from a crisis, the best people should be selected, that is, those who have special expertise in crisis-related issues. It is also very important that all areas involved in this issue or under its potential effects have representatives in this group (Mishra et al., 2021). Another important role of the crisis investigation group is to determine the main spokesperson, which prevents the integrated management organization from speaking in a scattered manner (Dehghan S. et al., 2024). Today, the urban management system is faced with new phenomena that require a review of the planning and management system of cities. This is while the wide wave of globalization and the development of communication technology are transforming the concept of space and time (Aghazadeh, M. et al., 2018).

The process of globalization will make scientific management necessary for the cities of the country. In this management system, all tasks and activities of the organization are designed and implemented based on information networks, the employees of urban organizations will be continuously learning and training, and creativity and innovation are considered the most important organizational tasks. Therefore, integrated management in urban crises is to create a structure that connects the collection of living parts of the city (Gheitarani, N., et al., 2024- a). This structure should create a proper relationship between all the living elements of the city, people's groups, organizations, and governmental and non-governmental organizations. Also, an integrated crisis manager is a person

who has sufficient specialization and authority and prepares all existing hardware and software facilities (security, retrofitting, construction, etc.) for every natural crisis before unexpected events occur.

Urban vulnerability and its recognition criteria. Vulnerability is a term that is used to show the extent and amount of potential damage caused by natural disasters to communities, buildings, and geographical areas. The three main elements that help to understand the vulnerability in the urban area are:

- Existence of one or more tension factors that citizens have faced. Such as earthquakes, floods, etc.
- When the city managers feel that they are not successful countermeasures and do not have a ready answer to face urban natural disasters (floods, droughts, earthquakes, etc.).
- Negative effects and consequences (floods, earthquakes, etc.) on citizens. Based on the above criteria, it can be concluded that the most vulnerable groups among citizens are those who live in more vulnerable urban areas (Farrokhirad & Gheitarani, 2024).

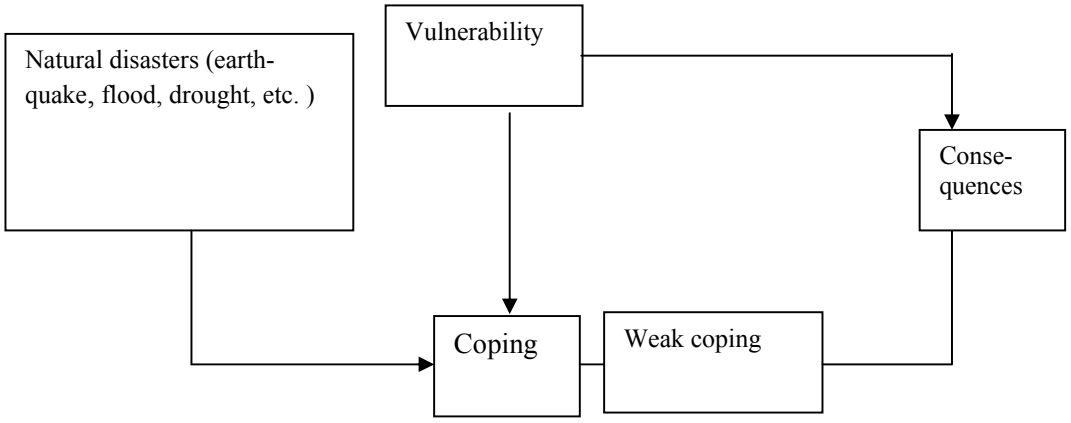

Figure 1. A theoretical model of vulnerability framework

The theoretical framework of vulnerability. The following formula is also used to measure vulnerability:

Vulnerability = F(R1E1C1)
The ability to predict disasters: R
The area of the area or affected population: E
Coping skills: C

The above formula shows that vulnerability is a function of three elements: the ability to predict disasters, the area of the affected area or population, and coping skills. What can be interesting in this formula for integrated crisis management to reduce natural disasters? Educational ability, the third element means coping ability. The more coping skills are strengthened, the more vulnerable the society will be. Vulnerable factors are very diverse (natural, physical, social, economic, fundamental, laws and regulations, etc.) and these factors affect each other not individually but in the form of a comprehensive system.

Table 1. Effective variables on the vulnerability of cities against natural crises

Variable	Types and description
Natural	Characteristics of the crisis, i.e. depth, magnitude, time of occurrence, duration
Physical and structural	Geological conditions and structural morphology of the city's infrastructure, such as the distance and proximity to the fault line, characteristics and depth of surface materials, characteristics of bedrock
Social and economic	Topography and slope

Methodology

The study method or plan can be defined as techniques that the researcher chooses based on the subject and purpose of the study and follows the instructions and logical rules of the scientific method in the course of his study activities. The research framework includes dispersion, classification, how variables are related and correlated, determining cause and effect relationships, comparison, and analysis. The type of research is applied and the research method is spatial analysis, and the statistics of the existing situation (including statistics on the characteristics of houses in Najaf Abad city, quantitative and qualitative characteristics of the houses, geological conditions, and the characteristics of organizations involved in the crisis, hospitals and other related statistics) have been used (Ghadarjani et al., 2013- b).

The method of data collection is a combination of fields and documents. This article seeks to integrate the two branches of crisis management and urban planning, in such a way that practical results can be achieved in the city of Najaf Abad (Gheitarani, N., et al., 2013- a). It is necessary to carry out such research to have a method that has the capability of comprehensiveness and analysis of spatial differences, which is the spatial analysis method. Descriptive, mental, and documentary research methods have been used in theoretical topics. This means that by examining the writings of different experts, it has been tried to identify the desired logical connection and to analyze the connections and links between the desired concepts (Ghadarjani et al., 2013- a).

The correlation method has been used for the statistical analysis of variables using statistical and graphic software. The method of studying and analyzing data is based on "multi-factor evaluation models" and the results obtained can be a successful model of recognizing, preventing, and dealing with the possible consequences of unexpected events in connection with the organization of population settlement centers and activities at the disposal of planners and executive managers (Gheitarani, N., et al., 2024). The method of inductive analysis was used so that with the help of statistical analysis, the obtained materials can be generalized to larger legal problems. The method of data collection is in the field, by referring to the city environment and by examining the city's residences and different organizations and direct communication with the crisis officials of the related organizations and the city's hospitals (Dizaji, A. et al., 2023).

Statistical society. To complete the existing information sources, first-class sources such as questionnaires have been used. The statistical population studied in the questioning process is the houses of Najaf Abad City, hospitals, and all organizations related to the crisis in Najaf Abad City.

Sample size and sampling method. The sample size was calculated by probability sampling using Cochran's formula with a confidence level of 95.5, the number of 340 samples. The method of distribution of questionnaires follows the hierarchical composite model within the framework of divisions within the city of Najaf Abad. To determine the reliability of the measurement tool according to the sub-dimensions proposed in the questionnaire, for each of the dimensions the intra-item correlation method and Cronbach's alpha coefficient technique have been used. Four main index

groups, including "physical-spatial vulnerability indices", "city housing vulnerability indices and human vulnerability", "crisis-related organization vulnerability indices" and "vulnerability indices related to hospitals" "City" has been analyzed using statistical models and methods.

Materials and variables studied. In this research, vulnerability is more important than the aspect of the urban body, and it means that the effects of natural disasters on the form and elements of the city will be such that it will disrupt or reduce their efficiency. In general, the data required for the study includes the following:

Spatial data includes: the network of roads of the area divided by width, separate units on the scale of property parcels, types of uses, and in general the digital map of the existing situation according to the uses and includes the necessary information such as the area of the parcels, the type of use, etc.

Statistical and descriptive data including type of use, number of floors, type of structure, building density, population density, number of households in a residential complex, population of each residential complex, hazardous uses, life of structures, year of establishment of the building, etc., and data Those related to the state of readiness of organizations and medical centers in facing the crisis.

The study of these variables is within the framework of the general goals of the research and proving or rejecting the hypotheses of the article, which should meet the goals of the research in an interwoven set. Weighting the variables. To express the vulnerability and determine its size and type, the need to prepare a model in this connection is very noticeable. In this research, according to the level of study and the scope of the study, a suitable model for vulnerability analysis has been prepared, which includes the factors and parameters effective in vulnerability, and by combining them, the level of vulnerability can be determined according to the land use in different areas of the city. According to the limited characteristics of the study and the research topic, a model including seven variables (open spaces, population density, building occupancy factor and building density, life and type of building structure, area of parts, access, proximity to other harmful uses) to express the damage Resilience against natural disasters has been taken into consideration (Sadigh Sarabi, M., et al., 2024. -c).

The mathematical expression of this model is as follows:

k7..., F(k1, k2) = Vulnerability
k1, k2,... and k7 are effective factors in vulnerability.
That is, vulnerability is a function of variables k1 to k7.

Therefore, in the study scope analysis using this model, the study units are ranked between 1 and 4 according to the conditions of the scope and the desired variables. In all variables, rank 1 represents the lowest, and rank 4 represents the highest level of vulnerability and includes low vulnerability, medium vulnerability, vulnerability Significant, and vulnerability increases.

A = the weight of the factors (obtained by completing the questionnaire and averaging the opinions of experts).

K = factors used in the model.

Data collection tool. In addition to the use of available statistics on the quantitative and qualitative condition of houses and the vulnerability of Najaf Abad city, observation tools, question-

naires, maps, fieldwork, internet resources, and library resources have been used. To determine the validity of the data collection tool, the face validity technique has been used.

Data analysis tool. The analysis tool in this research is mostly based on statistical and graphic techniques:

- The statistical techniques used are:
- Regression correlation coefficient
- Grouping variables using factor analysis (factor analysis)
- Leveling of areas using the A.H.P. method

The use of statistical models and other methods in the field of vulnerability analysis using statistical, graphic, and mapping software such as SPSS, Excel, and Corel Draw and the use of geographic information system (GIS) software such as Arc View and analysis in The software of this system can be done.

Results

The main elements of the space organization of Najaf Abad city

The main elements of the spatial organization of Najaf Abad city, the functional perspective, the main roles and functions, and the main elements of land use are briefly presented in the table (2).

Table 2. The spatial organization of the city, its main elements, features, and main functions.

Major elements of land use	**Major roles and functions**	**functional perspective**	**Major physical areas of Najaf Abad city**	
historical elements - residential - cultural and tourism space - scientific and research centers - office and commercial space	Cultural-commercial	Exhibition of culture, economy, urban planning, and architecture of Najaf Abad city	Historic district or central city	Central Najafabad
Residential and related services	Scientific-tourist	Place of residence and activity of the middle classes - supporting the performance of the central city	old area	
Commercial and related services	Administrative	Place of residence and activity of the middle and upper classes	Modern texture	
Residential and related services	Residence-commercial and commercial	The center of the southern part of Shahr-najaf Abad	Porous texture and green north and west	
Commercial and related services	Housing - higher education - urban-commercial and commercial level services	Respiratory organ of Najaf Abad city	Informal housing contexts	
Higher education	Leisure time of citizens	The centrality of the northern area of Najaf Abad	New and planned urban contexts (Malek Shahr, Najaf Abad house)	

Major elements of land use	Major roles and functions	functional perspective	Major physical areas of Najaf Abad city
Large service spaces	Tourist camping	Place of residence and activity of low-income groups	Suburban, car, and detached textures

Construction situation and vulnerable tissues of Najaf Abad city. The construction situation of Najaf Abad city, like other cities in the country, is affected by factors such as population increase, increase in immigration, and, as a result, the need for housing. In the following, we will examine the state of construction and vulnerable tissues in Najaf Abad city and its role in the vulnerability of natural disasters.

Construction situation in Najaf Abad city. In recent years, with the increase in the population of Najaf Abad, the amount of construction has also increased. The total number of permits issued by the municipality between the years 2003 and 2008 was examined to check the construction situation in Najaf Abad.

Table 3. The level of physical tissue vulnerability of the fourteen districts of Najaf Abad city (figures in square meters).

The degree of vulnerability	The ratio of built space	built space	Total area	Regions
a lot	61/68	22/556	64/810	Region 1
average	20/29	26/531	14/1819	Region 2
a lot	52/67	79/777	98/1051	Region 3
average	32/43	01/536	32/1237	Region 4
a lot	88/61	55/1703	00/2753	Region 5
a lot	55/61	46/752	46/1222	Region 6
average	44/32	31/795	46/2451	Region 7
average	79/42	63/1209	88/2826	Region 8
average	76/38	71/468	11/1209	Region 9
a lot	32/52	82/716	14/1370	Region 10
average	20/29	68/273	13/937	Region 11
average	91/26	80/1314	21/3270	District 12
average	24/29	02/570	42/1282	Region 13
low	09/23	4/607	7/1402	Region 14
average	78/46	44/8321	26/17789	total sum

Therefore, in terms of the necessity of urban development and to improve and prosper the spatial-physical condition of the city, planning should be done in the direction of integrated urban management. This planning should promote the correct rules of housing provision and healthy construction activities among the citizens. The body of the city is built by the people, so the integrated urban management must be careful so that the people and institutions that have a role in the construction and supervision act in such a way that their construction does not disturb the physical appearance of the city and as a result the physical vulnerability of the city. Reduce against natural disasters work texture In the old context, the population is decreasing, the restoration of historical mo-

numents is not progressing following their erosion rate, and environmental pollution, especially air pollution, is more in the city center than in other areas.

Today's urban infrastructure and services do not have enough coverage in these areas and functions incompatible with historical centers are still active in these areas. Although this year Najaf Abad Region 8 is in second place after Region 5, it has faced a 44% decrease in the share of these monoliths and a 7.8% increase in the share of residential monoliths five to ten years of construction, and if this Keeping the process slow leads to burnout. Therefore, for the following reasons, the level of vulnerability of this tissue against natural crises is high:

- A very large area of this texture in Najaf Abad city (about 1300 kilometers)
- A major part of the old fabric of Najaf Abad city is worn-out fabric.
- Worn-out tissue has the worst condition against natural disasters.
- The spatial organization of residential areas is old, low-density, and mostly single-family, and its buildings are old and less durable.
- So 48% of residential buildings in Region 3 and 56% of houses in Region 1 were built before the Islamic Revolution. However, in the city of Najaf Abad, most constructions belong to the period after the revolution.
- About one-fifth of the buildings in two areas are not in good condition in terms of strength and should be improved or renovated.
- The native population of these tissues gradually vacates them due to inadequate accessibility, lack or lack of urban services, disorganization of the urban space, and giving their place to immigrant groups and low-income urban people, which causes destruction. It will gradually become houses.
- Although the ratio of the passages to the overall surface of the two regions seems sufficient (21/7), a large part of these passages are in the form of narrow and long passageways, with an organic structure, which poses a problem for the penetration of the rider into the tissue. This situation makes rescue and relief difficult.
- In the old context of the city, the average building density and population are low, but the amount of open space and public green space is also very low.
- Lack of relief facilities and services in this regard, the integrated management of urban crisis can prevent the deterioration and destruction of the old fabric by boosting the activities in the old fabric of the cities and proper planning, to preserve the historical and cultural values of the fabric. Old, to reduce its vulnerability to natural disasters.

Many cities of our country have a type of architecture, buildings, and very historical and attractive spaces, which should be controlled, organized, and maintained by integrated urban management. According to Figure (2), the relative density of the population of each urban area in Najaf Abad is very different, so the highest percentage of density is related to area 10 (with 117.3 people per hectare), and the lowest is related to area 12 (with 44.4 people per hectare). Region 12 has the lowest density due to its large size, the existence of agricultural lands, rural context, and low population, and Region 9 due to its relatively small population compared to the size of the region, the abundance of agricultural lands, and being marginal in the category of low regions.

Regions 5 and 6 also have a low population density due to the existence of military centers, barracks, and universities, the presence of topographies and unevenness, mountains and hills, and relatively large areas. Regions 3 and 1 have a high density due to their location in the center of the city, their small size, and the existence of important business centers in this region. Regions 8 and 10 are in the highest density category due to the abundance of population. Region 10 with 7.8% of its area contains 15% of the population of Najaf Abad city.

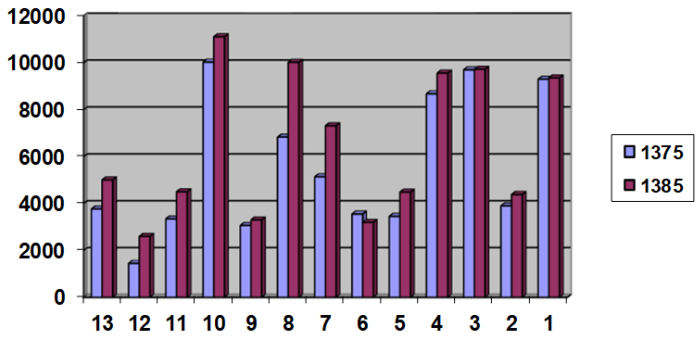

Figure 2. The relative population density of 13 districts of Najaf Abad city 1375-85 (figures in people per hectare).

Road network and its vulnerability. In an urban context, apart from land parcels and constructions, the road network plays an important role in the efficiency of the context when natural disasters occur .The pattern of the communication network along with its physical characteristics (length, width, and quality), which is mainly caused by the patterns of road and building proximity, has a great effect on the vulnerability of inner city roads .Najaf Abad transportation network system is categorized under the cellular system. But the central and historical fabric of the city has a rectangular grid system, which due to the way the city developed in the past, this development pattern has become a cellular pattern and continues.

Table 4. The level, percentage, and per capita of the road network of Najaf Abad city based on the revision plan

Per capita (square meter)	Share of the area (percentage)	Area (hectares)	City areas
6/25	5/22	235	**Region 1**
88/26	14/20	83/256	**Region 2 and 11**
7/22	6/21	7/254	**Region 3**
96/17	16/19	82/214	**Region 4**
82/18	25/17	26/267	**Region 5**
67/18	78/20	69/242	**Region 6**
42/21	7/21	5./532	**Region 7**
87/20	82/22	6./636	**Region 8**
2/35	2./23	75/257	**Region 9**
5/20	26/25	367	**Region 10**
86/22	42/21	16/3264	**Average**

The road network of Najaf Abad city, like other historical cities, is divided into two parts the traditional network centered on Chahar Bagh and other routes leading to it and the new road system of the city. The narrow width and complexity of the traditional network of the old network is the main reason for the lack of access to the residential units of this network.

Figure 3. The narrowness of the passages of the old fabric

In the end, after the analysis, the following results have been obtained:

1- In examining the role of integrated management against natural disasters in the city, awareness of the general physical-spatial situation of the city is a priority.

2- In the city of Najafabad, the physical expansion (horizontal and vertical) of the city has taken place without studying the situation of the city's crisis-proneness against natural disasters.

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In examining the role of integrated management against natural disasters in the city, awareness of the general physical-spatial situation of the city is a priority. In the city of Najafabad, the physical expansion (horizontal and vertical) of the city has taken place without studying the state of the city's crisis-proneness against natural disasters. The degree of vulnerability of body tissue in areas two, four, seven, eight, nine, and eleven is moderate and other areas are high. The area of the old structure of Najaf Abad itself is the size of a small city, most of which is a worn-out structure. The slum and marginal areas of Najaf Abad city are the most vulnerable parts of the city due to the low housing quality indicators. In the city of Najafabad, the growth of these areas can be seen in all the surrounding areas of the city.

The road network of the city of Najaf Abad due to the lack of radial streets next to the traffic rings, the narrow and complex network in the old context, the existence of historical and vulnerable bridges and a large number of intersections, and the juxtaposition of the old communication network and New has increased the vulnerability of the city. In examining the situation of rescue and rescue centers, the analysis shows that the per capita number of rescue and rescue services in Najaf Abad city is very low and also the distance of residential units from the fire station, emergency centers, and police center are in a very critical situation.

Since the integrated management of the urban crisis is a type of integrated and capable management in all institutions and organizations that can play an independent or complementary role in improving issues and solving urban problems topically and topically in the event of a natural disaster crisis, The lack of integrated management against natural disasters in the city of Najaf Abad has caused the spatial structure of the city to have characteristics that sometimes increase the vulnerability of the city. At present, due to the existence of gaps in planning and activities, as well as the oc-

currence of inconsistency between different decision-making departments in the field of urban crisis, the integrated management of urban crisis is presented as an inevitable necessity.

1- The vulnerability of body tissue in areas two, four, seven, eight, nine, and eleven is moderate and other areas are high.

2- The area of the old structure of Najaf Abad itself is the size of a small city, most of which is a worn-out structure.

3- The slum and marginal areas of Najaf Abad city are the most vulnerable parts of the city due to the low housing quality indicators. In the city of Najafabad, the growth of these areas can be seen in all the surrounding areas of the city.

4- The road network of the city of Najaf Abad due to the lack of radial streets next to the traffic rings, the narrow and complex network in the old context, the existence of historical and vulnerable bridges and a large number of intersections, and the juxtaposition of the old communication network and New has increased the vulnerability of the city.

5- In examining the situation of rescue centers, the analysis shows that the per capita number of rescue services in Najaf Abad city is very low and also the distance of residential units from the fire station, emergency centers and police center is in a very critical situation.

6- Since the integrated management of the urban crisis is a type of integrated and capable management in all institutions and organizations that can play an independent or complementary role in improving issues and solving urban problems topically and topically in the event of a natural disaster crisis, therefore

7- The lack of integrated management against natural disasters in the city of Najaf Abad has caused the spatial structure of the city to have characteristics that sometimes increase the vulnerability of the city.

8- At present, due to the existence of gaps in planning and activities, as well as the occurrence of inconsistency between different decision-making departments in the field of urban crisis affairs, the integrated management of urban crisis is presented as an inevitable necessity.

Conclusion

The conclusion of the research in 6 levels includes the results of the natural infrastructure of Najaf Abad city, the study of the current situation of Najaf Abad city, the physical-spatial situation, the structural situation of the city's residences, the human vulnerability situation, and the vulnerability of crisis-related organizations and the city's hospitals, which in Its details are explained further.

The results of the state of natural infrastructures in Najaf Abad city. The stratigraphy inside the city of Najaf Abad includes Jurassic deposits, Cretaceous limestone formations, and Quaternary deposits. In terms of geomorphology, in general, Najaf Abad is located in a complex tectonic part with a great diversity of lithology. The faults created during the geological life of this region have led to the formation of several large structural plains that have a trend parallel to Zagros, i.e. northwest-southeast. Based on the studies, six faults have been identified, namely the Zagros fault, Qom-Zafrah fault, Kalah Qazi fault, Lanjan fault, Najaf Abad fault, and Miankoh fault in Najaf Abad region. The city of Najaf Abad is located in central Iran in terms of earthquakes.

Earthquakes in central Iran often occur discontinuously and suddenly in terms of time and location, with large magnitude and low focal depth along the reverse faults of the foothills. The physical development of the city is also based on the natural drainage pattern, along with problems such as the lack of a surface water disposal network, pouring new asphalt on old asphalt, etc.

The results of the study of the current situation of the city of Najaf Abad. The important features and shortcomings of the Najaf Abad region, which are obtained from the analysis of the

current situation and its developments, can be summarized in the following cases: Failure to deal with the Najaf Abad region as an integral element, considering the integrity of the elements of the region. Economic imbalance between Najaf Abad region and other regions of the province has led to heavy migration to Najaf Abad city. Unstable hierarchical system of population settlement in the region and severe population difference between Najafabad and other cities in the region.

The imbalance between population growth and physical-economic development of Najaf Abad city. Non-compliance with the master plan for the development of Najaf Abad city. Under these conditions, it can be concluded that integrated urban management has no duty and mission, especially in terms of dealing with natural disasters, except in two cases: Spatial-physical capacity building to realize the qualitative development of the city, with special attention to the relative vulnerability of the city in terms of natural disasters in the framework of the prevailing limitations and potentials and its spatial-physical reflection in each of the parts and areas of the city. Laying the foundation and creating physical-spatial facilities necessary to improve the quality and safety of the lives of the citizens of Najaf Abad in different parts of the city.

The results of the physical-spatial structure of Najaf Abad city. The growing trend of urbanization and urban population is a factor for large losses when natural disasters occur. From the study of the spatial-physical structure of Najaf Abad city in terms of vulnerability, the following results were obtained:

- Before addressing the state of other indicators of the city's vulnerability to natural disasters, awareness of the general physical-spatial state of the city is a priority.
- The spatial structure of Jaf Abad City has features that sometimes increase the vulnerability of the city.
- The city of Najaf Abad has had a physical (horizontal and vertical) expansion in an unprincipled way, without a plan and without studying the city's water crisis, in terms of natural disasters and identifying the existing faults in the region.
- The population's potential demand for settlement within the limits of Najaf Abad city or its continuous outskirts has led to the continuous development and expansion of Najaf Abad city.
- In terms of the vulnerability of body tissue, regions two, four, seven, eight, nine, and eleven percent are average, and other regions have a high percentage.
- The area of the old structure of Najaf Abad city itself is the size of a small city, most of which is a worn-out structure.

So in Region One (26.29 percent), Region Three (25.96 percent), and Region Nine (18.25 percent) the tissue is worn out. The spatial organization of residential parts is old, low-density, and mostly single-family, and its buildings are old, large, and less durable.

- The slum and marginal areas of Najaf Abad city are the most vulnerable parts of the city due to the low housing quality indicators. In the city of Najaf Abad, the growth of these areas can be seen in all areas around the city. Lack or lack of urban services, disorganization of urban space, inappropriate accesses, and irregular constructions in these types of settlements are the main factors of vulnerability to natural crises in these areas.
- In terms of density vulnerability index (population, functional, and height), areas 2, 9, and 8 are the densest areas of the city and as a result, they are the most vulnerable areas in terms of density index.
- The road network of Najaf Abad city due to the lack of radial streets next to the traffic rings, the narrow and complex network in the old texture, the existence of historic and vulnerable bridges the large number of intersections, and the juxtaposition of old and new communication networks, the vulnerability of the city has increased.

- In the last analysis of the physical-spatial condition of the city, the condition of rescue centers has been examined.

The analysis shows that the per capita number of rescue services in Najaf Abad city is very low and also the distance of residential units from the fire station, emergency centers, and police station are in a very critical situation. In the integrated management of the urban crisis, planning for the city should be done both for organizational development and for social, cultural, etc. development. At the current stage, due to the aforementioned reasons and the existence of gaps in planning and activities, as well as the occurrence of inconsistencies between different departments. The decision-maker in the field of urban crisis affairs, the integrated management of urban crisis is presented as an inevitable necessity.

The results of the structural condition of houses in Najaf Abad city. According to the conducted studies, the major conditions and anomalies in the security structure of the city of Najaf Abad in terms of the structural condition of the city's residences are evident. The following results were obtained from the investigation of various aspects of the vulnerability of the houses in Najaf Abad city:

- At first, the share and rank of each of the different variables in the vulnerability of the city's houses was analyzed, so that the variables "access to the building, access to the floors of the building, and the age of the building" had the greatest impact on the vulnerability of the city's houses.
- In the second step, the coefficient of each variable in vulnerability has been examined.
- For this purpose, multivariate regression analysis was used.
- The regression correlation coefficient of the mentioned variables and the level of vulnerability was 65%, which is significant with a confidence level of 99%.
- Finally, based on the analysis of all variables, the level of vulnerability of houses for the whole city and also by regions was obtained, which are the most vulnerable regions of the city, respectively, regions 1, 3, 4, and 8.

The results of the human vulnerability situation in Najaf Abad city. Although it is not possible to accurately predict natural disasters in terms of time, if people know what other events may happen after an earthquake, they can prevent or reduce them. Therefore, it is necessary to analyze the level of preparedness of society against natural disasters and measure human vulnerability. The experience of past earthquakes in the world and especially in Iran has shown that a large part of the losses and damages caused by earthquakes are due to the lack of awareness of the people about the safe design of the building and the lack of awareness of the safe areas inside and outside the building, as well as the necessary measures before, during and after the earthquake. Therefore, public education activities must be based on creating the necessary preparation for people to face natural disasters correctly using effective methods with high utilization.

The results of the vulnerability of crisis-related organizations and hospitals in Najaf Abad city. Examining the various aspects of the vulnerability of Najaf Abad city shows the depth and dimensions of the problems in all the fields of natural, service, executive, regulatory relief, and security infrastructure. Therefore, considering the size, population, and economic, political, and social importance of the city of Najaf Abad, as well as the potential and actual risks it faces, in comparison with the facilities and equipment according to world standards and the characteristics of the population threshold and the range of types of risk, the specific lack of facilities of the organizations Related to the crisis and its equipment limitations, it is quite tangible and evident.

One of the main missing links in the key direction of the country's activities and coordination regarding crisis management is the absence of integrated city crisis management. The following results were obtained from examining the level of vulnerability of organizations related to the Najaf Abad crisis: Comprehensive planning against natural disasters and creating a proper crisis management structure in healthcare centers, especially hospitals, to organize and control the situation when a crisis occurs, is of considerable importance. Meeting the service needs of the hospital during unexpected incidents often depends on the whole system being ready to serve not only inside the hospital but also in the city. The set of hospital capabilities is a definition of the practicality of the work and the real capabilities and capabilities of its facilities. Finally, in connection with the study of the vulnerability of Najaf Abad hospitals in the above three areas, the following results were obtained:

- The first factor that is the most appropriate in examining the vulnerability variables of organizations is the existence of a storage system for the management of relief and rescue support.
- From the total rows of the matrix, the importance of the variables related to the investigation of hospitals, the type of skeleton, the age of the building, and the number of hospital beds are the most important in the vulnerability of the city's hospitals.
- In terms of vulnerability ranking, hospitals in regions 3, 1, and 10 have the highest vulnerability among the city's regions.
- Presenting the research analytical model for natural disaster prevention program and integrated crisis management. Considering the high level of vulnerability of Najaf Abad and other cities, it is obvious to create and compile an integrated crisis management plan.
- For this purpose, proper and coherent planning should be considered for prevention and preparation to avoid the negative consequences of natural hazards.
- Reduced and achieved the natural stability of big cities. Before presenting the model, the effective obstacles in city crisis management have been presented.

The planning model for integrated crisis management can be considered in 6 main phases which are:

1- Collecting, interpreting, and evaluating basic information about the environment and existing risks: In this part, the physical-natural description of the city, including the geological, geotechnical, and weather aspects, and the evaluation of the environmental capacity and their limitations and obstacles in the way of land development and use are discussed.

1- Analysis of the elements at risk and their vulnerability: The analysis of the vulnerability of a city against natural disasters is done according to the following issues: 1- Urban vulnerability factors, 2- Environmental factors, 3- Socio-cultural factors, 4- economic factors, 5- managerial organizational factors and 6- infrastructural factors.

In analyzing the phenomenon of urban vulnerability, attention should be paid to the current state of the city and all its factors in the event of an accident, and issues such as environmental surveys, history of natural disasters in the region, and medicine. The planning of infrastructures and social, cultural, and economic surveys should be considered. The purpose of this part is to determine the weak points of the urban system in facing natural disasters. Risk assessment about future accidents and estimation of costs caused by accidents:

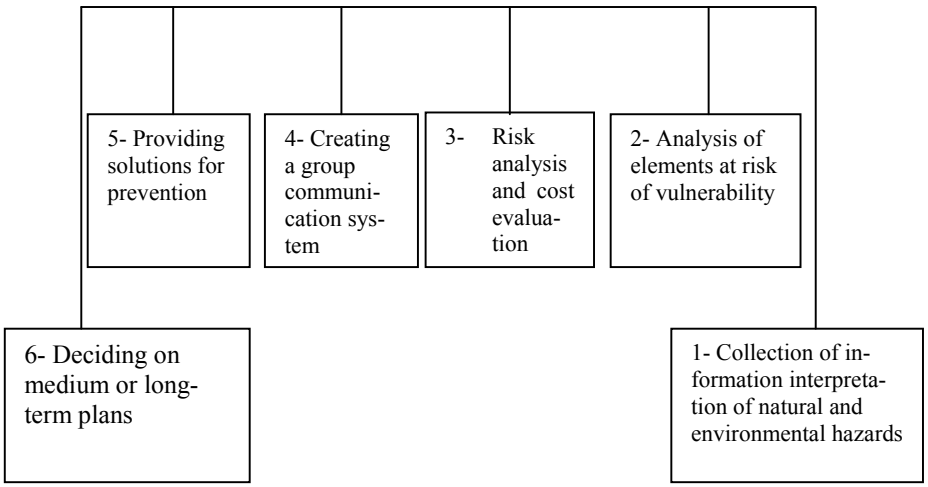

Figure 4. Main phases

The main phases include estimation of human, economic, social, environmental, and physical aspects of the accident, examining the status of the communication system between organizations and people to increase public awareness, creating appropriate structures based on the environment in urban areas: providing solutions and suggestions to activate research to reduce the effects of natural disasters in the city, and selection of the final plan regarding prevention measures and activities in the form of medium or long-term plans by integrated urban crisis management.

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