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Research Article

Application of City Development Strategy for Improvement of Informal Settlements in Iran: Case Study of Mouzirj Neighborhood of Babol

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Abstract: Informal settlements are an undesirable consequence of the rapid growth of urbanization in contemporary society and a major challenge facing cities, especially in developing countries. The common policy of government disbanding of informal settlements contradicts the basic human right to shelter. A more realistic and humane approach is tolerance and gradual integration of such areas into the established city. In Iran, in parallel with urbanization, the development of informal settlements is a common phenomenon in contemporary cities. The Mouzirj neighborhood on the western edge of the city of Babol is an informal settlement. It faces physical, economic, social, legal and environmental problems. Providing solutions for improvement of Mouzirj will increase safety and bring the neighborhood into compliance with standards for residential neighborhoods. This study used the City Development Strategy (CDS) to improve this informal settlement in Babol. The research used a descriptive-analytical approach and field studies to determine the strengths, weaknesses, opportunities and threats for the SWOT method and develop suitable strategies for improving the informal settlement. Strategies were prioritized using the Quantitative Strategic Planning Matrix (QSPM) model and the solutions were suggested for improving the region.

Keywords: CDS, informal settlements, mouzirj neighborhood of Babol, QSPM, SWOT

INTRODUCTION

By the middle of the twentieth century, 3 out of every 10 people lived in urban areas. Three decades later, the population of cities had increased worldwide. Today more than half the world population lives in urban areas; by the middle of this century, most people will live in metropolitan areas (Un-Habitat, 2010).

Poverty and the spread of informal settlements is a major issue for urban society worldwide. Statistics show that, if no action is taken, 1 in 6 citizens worldwide will be residents of urban slums. About 72% of the urban population of sub-Saharan Africa, 43% of the Asia-Pacific, 32% of Latin America and 30% of the Middle East and northern Africa are residents of informal settlements (Un-Habitat, 2006). They shelter a large portion of the populations of large and growing cities in developing countries. There is public agreement about the need to improve these types of settlements, but solutions to achieving the goals of rehabilitation remain unclear (Abbott, 2002).

Programs to organize informal settlements have not been exceptional from changes in development. Before 1970, approaches involved solutions based on the destruction of the settlements and compulsory displacement of their residents. (The World Bank, 2000) The result of this approach has been increased social and economic costs. New approaches by international organizations promote improving such residential areas and discourage the destruction of settlements and displacement of residents (The World Bank, 2005).

The UN Resident and Humanitarian Coordinator predict that by 2020, the urban population of Iran will double and that 10 million of these new residents will be members of the urban poor. Of these, 5-7 million will reside in urban informal settlements. (Un-Habitat, 2008) Informal settlements first appeared in Iran in the 1960s. Increased urbanization since then has caused serious problems for Iranian cities. In 1965-1970, irregular and rapid migration of residents from rural regions to large cities increased and the problem of marginal urban growth continues.

According to assessments by a specialist on urban rehabilitation in Mazandaran province, the five neighborhoods of Mouzirj, Sadat Mahalleh, West and East Kati, Bagh-e Abadian and Shahr-eTaleghani are informal settlements that surround the city of Babol, mostly to the south of the city. They grapple with physical, environmental and legal issues. Rehabilitation projects for these areas would increase safety, choice of residences and compliance with standards for residential areas. The dominant approach of the present study was the City Development Strategy (CDS) with an emphasis on local communities. (External Factors Evaluation) EFE, (Internal Factors Evaluation) IFE, Internal External (IE) and SWOT matrices were used to analyze the existing conditions of the neighborhoods

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and develop strategies. The QSPM technique was used to prioritize strategies and determine which have the greatest chance of realization.

Theoretical foundations of study: The dominant approach to coping with today's difficult and uncertain conditions, especially the rapid changes in internal and external factors in cities in developing countries, is the city development strategy. The economic and administrative structures of cities do not meet existing problems and deficiencies, but they must change their performance and efficiency gradually. The CDS seeks to improve city performance on a sustainable basis and evaluate it for factors like sustainable economic growth, development of life opportunities, decreasing poverty and improving the environment and public health, especially in informal settlements and the low-income spectra (Alliance, 2006). CDS is an executive program for balanced growth in cities that is developed and sustained by public participation to improve the quality of life for all citizens. (Asia Development Bank, 2004).

CDS is not a programming method with precise definitions, but is an approach to strategic programming. On the urban level (urban regions and neighborhoods), it has clear general features:

- Set goals for growth and development of the city and poverty reduction
- Encouraging a broad base of the participative process by consulting interest groups and organizations
- Develop an informative and a strategic program for development (Alliance, 2005)

CDS has been established using the quadric principles of livability, competitiveness, bankability and good urban management and governance. It promotes sustainability of cities and the World Bank believes that CDS should provide a framework to achieve these four principles (Buffalo City Development Strategy, 2007).

Although the components of CDS change in response to differing conditions and features of a city, the main elements include:

- Design and assessment, including organizational establishments for assessment of the status of the city
- Vision and strategy, including for the long-term
- Implementation and supervision, including programs, institutionalization of CDS processes and implementation of suitable mechanisms (The World Bank, 2008)

The CDS process comprises five stages.

Preparation: This stage includes identification of main stimuli and partners, management system, definition of goals and procedures.

Analysis: Gathering basic information, analysis of strengths and weaknesses, opportunities and threats and promoting a common understanding of priorities and problems.

Regulation of strategies: Definition of a strategy, regulation and assessment of options and determination of stakeholder roles.

Operation: Running projects, monitoring and assessment of their development Consultancy (Asian Development Bank, 2004).

RESEARCH METHODOLOGY

The present research is based the descriptive-analytical research method. Field methods used to prove research hypotheses include gathering local information through observation and gathering required information using interviews with experts, officials and residents.

In the CDS, the SWOT model was used to analyze conditions of the given region. For SWOT, IFE and EFE matrices should be provided. These matrices are tools that allow strategists to assess external and internal environmental, economic, social, political, cultural and technological factors, market conditions and competition in the given temporal section. These matrices can be used for urban strategic programming. Weights are given to weaknesses and strengths and opportunity and threats based on the opinions of experts. They are then scored from 1 to 4 in terms of urban adaptation using opportunity and threat. Scoring is different for weaknesses and strengths; a score of 3 or 4 indicates strengths and a score of 1 or 2 indicates weaknesses. The weighted score of any factor is calculated and sum of the weighted scores for the city is determined.

After identification of environmental factors (opportunities and threats) and internal factors (strengths and weaknesses), they are entered into the SWOT matrix from the IFE and EFE matrices and the combined strategies are determined. The QSPM matrix is used to choose and prioritize strategies and the different options are prioritized by their attraction score (David *et al*., 2009; Ali Ahmadi *et al*., 2008).

Study region: Babol is a major city in Mazandaran province in Iran. The city has a population of 201789 and an area of 1587 km^2. Five neighborhoods to the south and west of the city Babol are informal settlements and the proposed projects were deemed necessary to improve conditions in these settlements.

The present study focuses on Mouzirj neighborhood with an area of 104.7 ha. It is located on the western edge of Babol in an agricultural area. Mouzirj is bordered to the north by Astanehsar, to the

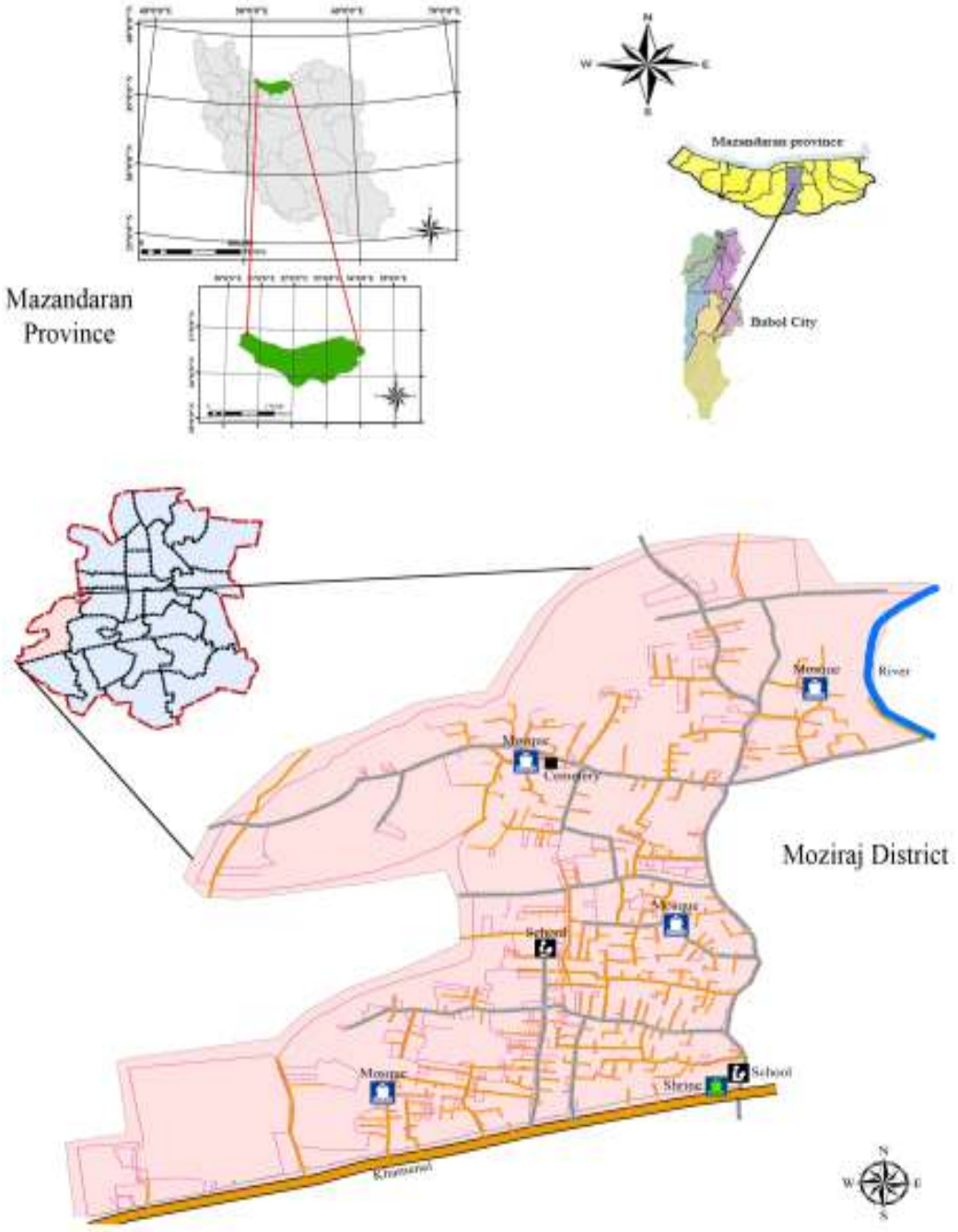

Fig. 1: Moziraj District of Babol

east by the neighborhoods of Babolroud and Shahr-e Taleghani, to the west by agricultural land and the Amol-Tehran highway and to the south by Ayatollah Khamenei Blvd. The population of Mouzirj is 11897, which comprises 5% of the population of Babol.

To design a strategy suitable for Mouzirj, it is necessary to define key problems and axes that effect development in the city and neighborhood as expressed by the residents and officials of the region (Fig. 1). These include:

- Physical segregation from the city and the resulting economic and social segregation
- Basic lack of urban services
- Lack of ownership documents and permits and addressing legal and administrative land and building ownership issues
- Black market economy and Lack of a local economic base and legitimate work opportunities
- Lack of local social integration
- Multiple environmental problems

Table 1: IEF matrix

		Weight	Score	Final score
Strengths				
1	Partial social integration of existing population	0.081	4	0.324
2	Existence of active labor force	0.081	4	0.324
3	Existence of informal local (social and economic) establishments, such as charities, sports and religious groups	0.100	4	0.400
4	Inexpensive land and housing	0.040	3	0.120
5	Existence of endowed land and activities	0.061	4	0.244
6	Existence of physical and cultural elements such as mosques	0.061	3	0.183
Weaknesses				
1	Insecurity of land and building tenure	0.100	2	0.200
2	Lack of urban and infrastructure services	0.081	2	0.162
3	Inadequate runoff water and sewage systems	0.061	1	0.061
4	Run-down physical infrastructure	0.081	2	0.162
5	Mixed cultural identity stemming from absorption of migrants from different areas	0.061	1	0.061
6	Unsuitable environmental conditions in Babolroud	0.061	1	0.061
7	Physical segregation and subsequent social and economic segregation from city	0.040	1	0.040
8	Existence of black market economy	0.081	2	0.162
	Total	1		2.504

Table 2: EEF matrix

		Weight	Score	Final score
Opportunity				
1	Proximity to Babolroud	0.081	2	0.162
2	High motivation for residential participation in joint affairs	0.100	3	0.300
3	Positive attitude of urban management for regional development	0.081	3	0.243
4	Possibility to develop legal channels for problems of ownership and building permits	0.100	4	0.400
5	Access to main communication networks of city	0.081	2	0.162
6	Allocation of donations from outside the region to religious, social and cultural activities	0.054	2	0.108
Threats				
1	Migration to this region from rural areas	0.100	3	0.300
2	Segregation from urban development process	0.081	2	0.162
3	Change from agricultural occupancy to residential and commercial	0.081	3	0.243
4	Substandard construction	0.081	3	0.243
5	Lack of cooperation between organizations for joint projects	0.054	2	0.108
6	Habitual illegal activity in construction and economy	0.081	3	0.243
	Total	1		2.674

The strategy for Mouzirj is derived from these key problems." Mouzirj should develop urban sustainable development, a dynamic economy and community by 2024."

The long term objectives are:

- Physical, economic and social connection of Mouzirj to Babol
- Creating an environmentally-friendly region

The immediate objectives including:

- Implementing urban services
- Reinforcement of social and cultural features of residents
- Participation of residents in the regional, economic and social affairs and interfacing with city management
- Promoting environmental quality with participation of residents and organizations

Strengths and weaknesses, opportunities and threats of Mouzirj: To provide solutions and policies for development, questionnaires designed to identify 6 strengths, 8 weaknesses, 6 opportunities and 6 threats were distributed to specialists in urban planning. The results were weighed and prioritized by allocating a weighting factor of zero (not important) to 1 (very important) to each response so that the sum of the weighting factors equals 1. The following stages were then followed to extract strategies and priorities:

- Development of IEF matrix for strengths and weaknesses (Table 1)
- Development of EFE matrix for opportunities and threats (Table 2)
- Development of SWOT matrix (Table 3)
- Development of IE matrix (Fig. 2)
- Development of QSPM matrix (Table 4)

A total value of 2.504 was obtained from the IFE matrix, which indicates a weakly positive value for strengths over weaknesses. The average score is 2.5 for this matrix.

A value of 2.674 was obtained for the EFE matrix, which indicates a positive value for environmental opportunities over environmental threats.

Internal-external matrix: The IE matrix identifies subjects in the quadric matrices (aggressive, conservative, defensive and competitive) from the final scores of the external and internal factors assessment matrices.

Table 3: SWOT matrix

Mouzirj	Strengths	Weaknesses
Vision • A region synchronized with urban sustainable development • Efficient economy and capable community • High-quality environment	1. Partial social integration 2. Existence of active work force 3. Existence of informal local (social and economic) establishments, such as charities, sports and religious groups 4. Inexpensive land and housing 5. Existence of endowed lands and cultural activities 6. Existence of physical and cultural elements such as mosques	1. Insecurity of land and building tenure 2. Lack of urban and infrastructure and services 3. Inadequate runoff water and sewage systems 4. Run-down physical infrastructure 5. Mixed cultural identity stemming from absorption of migrants from different areas 6. Unsuitable environmental conditions in Babolroud 7. Physical segregation and subsequent social and economic segregation from city 8. Existence of a black market economy
Opportunities (O)	**Aggressive strategy (SO)**	**Adaptive strategy (WO)**
1. Proximity to Babolroud 2. High motivation of residents to participate in joint 3. Positive attitude of urban management for regional development 4. Possibility to develop legal channels for problems of ownership and building permits 5. Access to main communication networks of city 6. Allocation of donations from outside the region to religious, social and cultural activities	O (1, 2, 3) + S (1, 2, 3): develop social participation of residents in environmental rehabilitation and promotion of Babolroud O (2) + S (2, 3): The invitation of people participation and promotion of social and career O (2, 5) + S (1, 3, 6): promote cultural and historic features of region O (6) + S (1, 2, 3): advocate involvement of local economic groups to increase employment opportunities O (6, 3) + S (1, 5): develop and promote public spaces	O (2, 3, 4) + W (2, 3, 4, 7): promote urban services and infrastructure facilities O (3, 5) + W (7): creating and reinforcing physical, economic and social connections with city O (2) + W (6): promote environmental and tourist value of Babolroud
Threat (T)	**Expediency strategy (SW)**	**Defensive strategy (WT)**
1. Migration to this region from rural areas 2. Segregation from urban development process 3. Change from agricultural occupancy to residential and commercial 4. Substandard construction 5. Lack of cooperation between organizations for joint projects 6. Habitual illegal activity in construction and economy	S (1, 3) + T (1, 4, 5, 7): development of and education about building standards S (4) + T (3): promotion of agricultural activities	W (5, 7) + T (2): facilitate local communication with city W (1) + T (1, 4, 6): control physical development and correct management of unoccupied land W (1) + T (5, 6): facilitate issuance of legal ownership documents and building permits

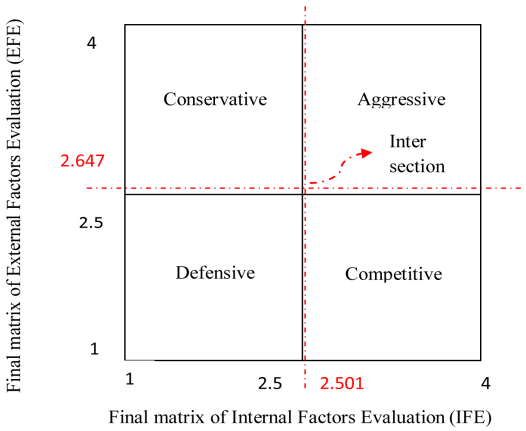

Fig. 2: IE matrix

The IE matrix for Mouzirj shows that it falls into the aggressive category and strategies for environmental opportunities should rely on these strengths.

SWOT matrix: The SWOT model lists strengths, weaknesses, opportunities and threats in separate cells. The strategies were obtained from the intersection of factors. This matrix produces 4 strategy categories: WT, ST, WO, SO.

QSPM matrix: This matrix is used to prioritize strategies and options in terms of their attraction scores and indicates which strategy should primary. For a factor to be attractive, it should play a main role in the process. The scores allocated for a factor are:

- (Not attractive): 1
- (Somewhat attractive): 2
- (Reasonably attractive): 3
- (Very attractive): 4

The sum of the weights of the scores is then calculated. The strategy having the highest score is the primary strategy; the rest are placed in order of score (Table 4).

QSPM prioritized the strategies in the following order:

- Develop social participation of residents in environmental rehabilitation and promotion of Babolroud (SO1)
- The invitation of people participation and promotion of social and career (SO2)
- Advocate involvement of local economic groups to increase employment opportunities (SO4)
- Promote cultural and historic features of region (SO3)
- Develop and promote public spaces (SO5)

Table 4: QSPM table

		Strategies									
		SO1		SO2		SO3		SO4		SO5	
Factors	Weight	AS	TAS	AS	TAS	AS	TAS	AS	TAS	AS	TAS
Strength											
1	0.081	4	0.324	3	0.243	3	0.243	2	0.162	3	0.243
2	0.081	3	0.243	4	0.324	2	0.162	4	0.324	2	0.162
3	0.100	3	0.300	3	0.300	4	0.400	3	0.300	2	0.200
4	0.040	1	0.040	1	0.040	1	0.040	3	0.120	3	0.120
5	0.061	1	0.061	2	0.122	2	0.122	3	0.183	4	0.244
6	0.061	2	0.122	2	0.122	4	0.244	2	0.122	2	0.122
Weakness											
1	0.100	2	0.200	3	0.300	2	0.200	2	0.200	3	0.300
2	0.081	2	0.162	2	0.162	3	0.243	2	0.162	2	0.162
3	0.061	2	0.122	1	0.061	1	0.061	1	0.061	1	0.061
4	0.081	1	0.081	2	0.162	1	0.081	1	0.081	1	0.081
5	0.061	3	0.183	3	0.183	2	0.122	2	0.122	2	0.122
6	0.061	4	0.244	1	0.061	1	0.061	1	0.061	1	0.061
7	0.040	2	0.080	3	0.120	4	0.160	3	0.120	2	0.080
8	0.081	2	0.162	3	0.243	2	0.162	4	0.324	3	0.243
Opportunity											
1	0.081	4	0.324	1	0.081	1	0.081	2	0.162	2	0.162
2	0.100	4	0.400	4	0.400	3	0.300	2	0.200	2	0.200
3	0.081	3	0.243	2	0.162	3	0.243	3	0.243	3	0.243
4	0.100	1	0.100	2	0.200	2	0.200	2	0.200	2	0.200
5	0.081	1	0.081	2	0.162	3	0.243	2	0.162	2	0.162
6	0.054	2	0.108	2	0.108	2	0.108	3	0.162	3	0.162
Threat											
1	0.100	2	0.200	3	0.300	3	0.300	2	0.200	2	0.200
2	0.081	2	0.162	2	0.162	3	0.243	3	0.243	2	0.162
3	0.081	1	0.081	2	0.162	1	0.081	3	0.243	1	0.081
4	0.081	1	0.081	1	0.081	1	0.081	1	0.081	1	0.081
5	0.054	2	0.108	2	0.108	2	0.108	2	0.108	2	0.108
6	0.081	1	0.081	2	0.162	2	0.162	2	0.162	2	0.162
Total			4.930		4.531		4.451		4.508		4.044

Solutions to improving target region: After determining strategies and prioritizing them, action should be taken to implement the solutions in stages.

Long-term solutions (5 to 10 years):

- Bridging communications between Mouzirj and the rest of Babol
- Establish a shopping center
- Build high schools for boys and girls
- Build a multi-purpose covered sports complex
- Resolve issue of ownership of existing dwellings

Medium-term solutions (2 to 5 years):

- Cleaning drainage ditches and storm drains
- Establishment of a regional family health project
- Rehabilitation along the river margins
- Establishment of a sports-cultural center
- Building a regional police station
- Building a fire station
- Improve public transportation lines

Short-term solutions (6 months to 2 years):

- Clean and improve the main river
- Clean and improve streams leading to the main river
- Provide financial aid to local organization for events and cultural activities
- Installing traffic barriers and guardrails along the main frontage road between Mouzirj and Babolroud
- Equipping a local library
- Install lighting of major regional walkways

CONCLUSION

The present study focused on a CDS for improvement of the informal settlement in Mouzirj neighborhood on the western edge of the city of Babol. Many cities in Iran currently face the problems associated with informal settlements, of which Babol is a primary example. The main issues facing Mouzirj are physical segregation, lack of urban services, lack of security of tenure for land and structures, a black market economy and many environmental problems.

The present study gathered and assessed information about existing problems, strengths and weaknesses, opportunities and threats and used it to build the IFE, EFE and SWOT matrices. The IE matrix indicated that Mouzirj falls into the aggressive category. This means that aggressive strategies should be used to improve the condition of this settlement. The QSPM matrix specified the strategy of development of the social participation of residents in environmental

rehabilitation, followed by promotion of proximity to the historic and cultural features of neighboring Babolroud were the primary strategies. This indicates that addressing and solving environmental issues in Mouzirj is a priority for officials and residents.

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