

# CODIFICATION FRAMEWORK OF PLANNING AND DESIGN NEW TOWNS IN IRAN TO ACHIEVE SUSTAINABLE URBAN AREAS CASE STUDY: BAHARESTAN, IRAN

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©Ontario International Development Agency ISSN: 1923-6654 (print)

ISSN 1923-6662 (online). Available at <http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html>

**Abstract:** Inception of urban planning in Iran has coincided to Modern movement and strongly has been affected by its concepts until now. The policy of establishing new town is one of most important concept in last five decades. It seems that this policy in Iran is in close relationship with the goals of establishing new towns in some other countries, especially in Britain.

Building new towns has considered in two main sectors: pre\_ revolution (1979) and post\_ revolution (1979). The main objectives and methods in these sections are different. Before the revolution new towns were constructed based on political, security aims or in regard to operation of huge oil reserves and oil affiliated industries. After the revolution the objectives of building new towns turned out to be the control of population in large cities, decentralization of large cities, absorption overflow of population and house supplication for low-income people. However new urban developments have been allocated with a definite distance from main cities or even connected to them (many gardens and fertile farmlands have been destroyed due to development of such towns).

The survey indicates that most of new towns have merely succeeded to attract less population as they planned. The new towns have generally failed to achieve the 10 year envisaged goals and have converted into housing warehouses. At present, 17 new towns have been able to attract only 320,548 persons. These statistics introduce these towns as

undesirable places. The most important problems in these towns are as follow:

(a) Uniform house and public space pattern (b) Social and cultural conflicts (contradictions) (c) Lack commercial, administrative and health services (d) Poor quality of construction, architecture and urban design (e) Inefficient public transportation (f) High energy consumption (g) Lack of social interactions (h) Absence of sense of place (i) Poor relationship between human, built environment and natural environment (j) Car-based life (k) Lack of social capital ( l) Poor pedestrian facilities Natural environment demolish (j) More deterioration of inner city (in connected new towns)

All of these detected problems can be called generally “unsustainability” that causes loss of quality of life. Lack of vision for integrating different social, cultural and economic dimensions of urban life in a sustainable framework by planners, designers and urban management is one of the main reasons of this problem. Iran population will reach 130 million in 2021. It’s estimated that about 74 percent of total population will live in urban areas that time, that is, Iran’s urban population is estimated to increase about 96 million. So the country will need about twice land level of all existing cities to settle the additional 70 population in the next years (between 1986 – 2021). Regarding to this, establishing new towns is necessity of urban planning and urban design in Iran.

The main purpose of this paper is codification principles for new town planning and design by applying sustainability doctrines, trends and approaches. The results of survey will be presented as strategies, policies, methods and techniques that include all stages of urban planning, urban design and architecture process in different scales, from allocation new towns to architectural style or construction. The results also regard to different urban dimensions: functional, physical, social, economic and cultural dimension to create holistic sustainable urban areas in new towns. The results are also useful in regenerating inner cities.

In this context, there are valuable cases among Iranian new towns. Baharestan, a new town near Isfahan is selected for survey. It is planned, designed and built after the revolution. According to papers aim, Isfahan unique historical urban characters and natural context of this city confirm this selection.

**Keywords:** New towns of Iran; Sustainability; Sustainable urban design; Sustainable urban planning.

## INTRODUCTION

During the reign of the first Pahlevid (1921-1941) and second Pahlevid (1941-1979), different measures took place to lead to the development of cities and urbanization in Iran. They include the policy of modernization of the urban system, approval of urban planning laws, construction of streets, squares and freeways, political, social and cultural changes, implementation of national development plans, the role of oil revenues in the national economy, the consequences of the land reforms, the deterioration of agriculture sector, industrialization of the country, expansion of roads and railways, establishment of development poles, land transaction and building construction. The origin of establishing new towns before the revolution should be sought in the aftermath of social and economic changes and in the creation of political- bureaucratic or economic towns.

Employees' residential complexes, absorbing the overflow of population, to provide housing to government employees, to accommodate workers in the industry sector and to reconstruct the cities destroyed by earthquake. Following the slogan of supporting the poor and the needy, irregular and incessant conveyance of land in the city margins to the people, the problems of wars, economic ban, reduce living standards in rural areas and the consequent immigration of rural people to the cities and increased birth rate expanded the cities and urbanization, after the revolution. After the revolution, in order to solve the urban problems in the country, the policy of creating new towns was

assigned to the Ministry of Housing and Urban Development (MHUD) according to the approval of the government board in 1985. Based on this approval and in order to solve the urban problems, studies for locating and construction of new towns around the large cities began [1]. The major objectives of the new towns after the revolution and as one of the strategies of urban development were to absorb the overflow population of large cities, to offer housing to low-income groups, to prevent population growth and anatomic enlargement of the cities, to decentralize population and industries, and to accommodate workers of industry sector near the industrial poles. It seems that the policy of establishing new towns in Iran is in close relationship with the goals of establishing new towns in some other countries [2]. The policy of constructing new towns in Britain is based on the law for master plan or national policy of territorial planning adopted in a process of deliberation and public support [3]. The origin of new towns in Britain is in relation to the policy of decentralization of population and industrial centers, spatial distribution of population and industry, absorption of the overflow of London population and other big cities and regional economic development [4]. Different assessments have been carried out in regard to the functioning of new cities in England [5]. Hazel believes that the new British towns could have been ideal for solving the post-war national problems, but in practice they provided for only 3% of the new housing demands in the country and absorbed only 12% of the population increased between 1951 and 1970 until the end of 1970. Lewis Mumford (1971) lists numerous problems in the new towns of England, but in general evaluates them as successful [3]. Evelyn Denington (1972) assess the new British towns successful in accomplishing the objectives set for working conditions, inhibition of the expansion of large cities and reducing urbanization problems, but they seems unsuccessful in view of self-reliance [6]. It seems that the policy of creating new towns in Iran after the revolution had been affected by the model of new British towns. In many countries (specially Asian and African countries) the main goals of constructing new towns are restricting further growth of large cities, distribution of industry and population to undeveloped regions, accommodation of the industrial sector workforce, servicing rural areas, reconstruction destroyed cities and .... It seems that the objectives behind construction of new towns in Iran are similar to those in the other countries. Building new towns based on any objective continues in recent years. The survey of habitancy in these towns introduces some serious urban crisis in built environments: poor quality of life! This problem is corroborated by several evidences, but the most important of them is attracting less population as new

towns were planned for. The most of researches in this issue have tended to necessity, allocation and physical dimensions of them. In spite of applying urban design discipline in make urban environments better and more desirable during last decade in Iran; but the process of planning and design new towns based on comprehensive thinking and quantitative approach. Inhabitant's dissatisfaction confirms this claim. Some of important problems make them tedious are lack commercial, administrative and health services, inefficient public transportation, high energy consumption, car-based life, poor pedestrian facilities and..... All of these detected problems can be called generally "unsustainability" that causes loss of quality of life. Lack of vision for integrating different social, cultural and economic dimensions of urban life in a sustainable framework by planners, designers and urban management is one of the main reasons of this problem. Iran population will reach 130 million in 2021. It's estimated that about 74 percent of total population will live in urban areas that time, that is, Iran's urban population is estimated to increase about 96 million [7]. So the country will need about twice land level of all existing cities to settle the additional 70 population in the next years (during 1986 – 2021). Due to these reasons, the periphery of big cities is covered by garden and fertile land agriculture. Therefore, the new towns will have to absorb 6 millions of surplus urban population in 2021 (MHUD, 1990). Regarding to this, establishing new towns is necessity of urban planning and urban design in Iran. However, New Towns were designed to be different in the sense that they did not have the disadvantages inherent in satellite suburban development [8]. The objective was to make them socially integrated areas whereby each individual would have greater access to amenities and a general improved standard of living.

As no comprehensive research on the qualitative dimensions of new towns of Iran has not been conducted so far; the present article is considering a qualitative approach to issue of new towns. The purpose of this paper is to offer a framework for sustainable new towns. Therefore, a case study, Baharestan new town, is surveyed and according to documents and library related studies the results of this study will be presented. The findings of this paper are an efficient help in planning and designing sustainable and appropriate built environments in new towns of Iran and is considerable use to the programmers, researchers, urban designers and even architects in this segment.

#### **METHODS AND MATERIALS**

To study new towns of Iran in two sector before and after the revolution (1979); the available sources and

data are examined. The Statistical Center of Iran (SCI) provides a basis for studying the post-revolution policies of urban development, fast population growth and prediction on future growth and other qualitative studies. The paper takes advantage of existing sources in Iran and the personal experiences of the researchers. The statistics released from the MHUD go in association with questionnaires, qualitative interviews, and observations to forms a basis for the assessment of the urban environments of Baharestan new town. The interviews and observations are conducted to a random selection of the families residing in Baharestan.

#### **IDEA OF NEW TOWNS**

New Towns were developed to halt the forces of urban sprawl, which was mainly the result of improvements in public and private transport during the inter-war period but also coupled with significant economic changes, in Britain's cities and large towns. Some may suggest that the idea of 'Globalization' was also a very influential concept in urban restructuring [9], whereby an increase in imports and exports altered both the economy and society, consequently changing urban areas.

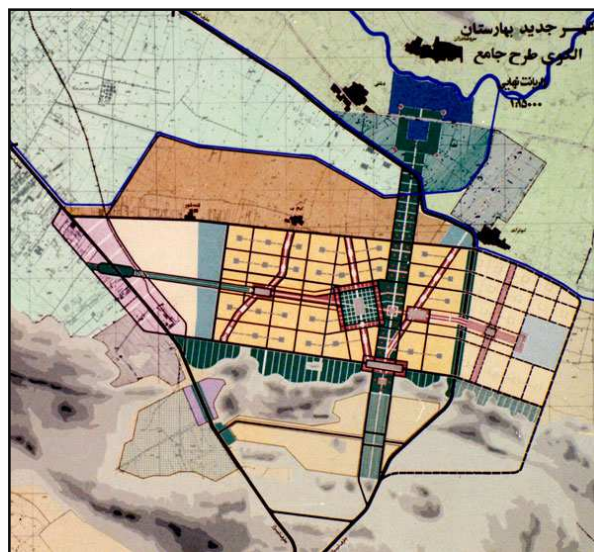
In areas containing worrying levels of urbanization, new satellite towns were constructed to ease the pressures on the environment, economy and society. This would redress the economic consequences of uneven development between cities and regions, in particular the legacy of the physical and economic decline of the major industrial areas [10]. Decentralist policies were also thought to be beneficial in the event of further aerial attacks following World War Two.

British New Towns were conceived as self-contained, socially balanced towns planned to receive overspill population and employment [11], and many were built with the concept of utopianism in mind. Haurd (1968) explained that the New Towns were an attempt to alter the ecological pattern of class distribution found in other communities and to change the whole character of urban class relationships.

The idea of a New Town Movement was the brainchild of the Victorian, Ebenezer Howard, whose book *Garden Cities of Tomorrow* provided inspiration and direction for post-war planners, who were developing a complete physical planning system. Howard wanted a balanced society with 'all true workers of whatever grade' [12]. Sir Patrick Geddes and Raymond Unwin also inspired planners to make the significant changes that were needed.



**Figure 1:** View of Lashtar Mountain from inside of Baharestan new town  
(source: authors, 2012)



**Figure 2:** Master Plan of Baharestan new town  
(Baharestan New Town Development Company, 1988)



**Figure 3:** Poor quality of architecture (uniform buildings)  
(Source: authors, 2012)

Some could argue that there have been five waves of New Town development, ranging from c.1903 (Garden City movement) to the present day. However this depends on varying definitions of ‘new’ and also how much impact they had on society e.g. industrialists created ‘new model’ towns and villages with the desire to improve conditions for their workers [12]. Interestingly such developments have taken place for many centuries, e.g. The Roman new town of Winchelsea and the Bastide towns of the 12th-14th centuries [11]. Also the USA has undertaken new town schemes since the 1920s. The development of new towns was dependent on certain factors such as balance and variety, ease of movement and access, opportunity and freedom of choice, the creation of an attractive city, public awareness and involvement and the efficient use of resources.

The first main phase (mark I) occurred as a result of the Second World War and was controlled under the New Towns Act 1946 (recommended by the Reith Committee) and the Town and Country Planning Act 1947, which were informed by an assortment of wartime commissions; the most famous being the Barlow Commission. This phase contained 14 New Towns (e.g. Welwyn Garden City and Stevenage) between 1946 and 1950, which greatly reflected the Garden City ideals.

The Reith Committee recommended that the Mark I New Towns should be circular with a central area, an industrial zone and a general urban zone, that is residential, which was to be split into neighborhood units. They believed that these units were the foundation of successful New Towns, as they would reverse the perceived breakdown of ‘community spirit’ during the inter-war years [13]. The committee also recommended that the area should be surrounded by a green belt, 6.4km wide (UWE material). None of the Mark I New Towns could conform to this model. The second phase (mark II) was to combat housing shortfalls in the rapid urbanization period of the late 1950s and early 1960s (e.g. Washington and Runcorn) and represented an abandonment of the neighborhood unit. The other main difference between this phase and the first phase was the adjustments in plan-form to cater for the impact of the automobile. Therefore, transportation networks were greatly improved and there was a tendency towards the use of a more compact, linear shape, which implied higher densities. Target populations ranged from 80,000-120,000 [11]. Finally, the third phase (mark III) was chiefly aimed at allowing for additional growth, mainly in more areas to the north of London, especially in the north of England, in the late 1960s. Migration and household formation had added to the pressures for development and a need for an alternative to expanding suburbs and

peripheral estates [8]. The New Towns were more distinctive, as they were quite often built around existing town centers and because of the urban fabric which existed before their designation. There were further developments of the transportation network, which was the most important factor in their growth. They were designed to house and employ much larger populations.

### BAHARESTAN NEW TOWN

After the revolution the government of Iran selected the MHUD<sup>1</sup> to formulate the new town development and to monitor its implementation. After the war (1988) the MHUD resumed its responsibility for new town planning and development using for site selection, master plan and approval, financing and construction. Thus, MHUD has selected the location of new towns sited in areas near Iran's major urban centers, large industrial establishments and in areas where land is owned by the government [2]. The studies for construction of new town in Isfahan were conducted within the framework of the regional master plan of Isfahan (1985). Based on the forecasts of the master plan, the population of Isfahan region will reach from 2 million in 1985 to 4.4 million in 2016 (Naqsh-e-jahan-pars Consulting Engineers Company, 1985). This region is considered as the second largest industrial pole after Tehran and accommodates heavy industries of iron and steel, military, petrochemical, cement and other industries. The new towns of Baharestan and Majlesi were put in the agenda for design and construction.

BNT<sup>2</sup> is located at 15 km southeast of Isfahan on the road of Isfahan to Shiraz, on the northern part of Lashtar Mountains (Figure-1).

### RESULTS AND DISCUSSION

The master plan of the new town was approved in 1993 (Figure-2). The executive activities for construction of this town started since 1988 (Baharestan New Town Development Company, 1998). A population of 320,000 is estimated to be accommodated in Baharestan from 1994 through 2016. According to the studies of the regional master plan of Isfahan, the population of Isfahan city will reach 2 million in 2016 and therefore the ration of population of Baharestan to that of Isfahan will be 16% in that year. For Baharestan, objectives of attracting surplus population of Isfahan, providing housing for low-income groups, anatomical and social decentralization of Isfahan city have been planned. In 2003, about 65,000 people are residing in Baharestan. 76% of this population comes from Isfahan province (37% from Isfahan city) and 24%

from other provinces. 19124 residential units are completed in Baharestan and 8558 other units under construction. The family size is 4.1 which indicates of a younger population in Baharestan than in Isfahan where this index is 4.3. The average income of people in Baharestan is less than average income in Isfahan. In fact, Baharestan has reached its goal of providing housing to low-income groups. A sample study showed that the main reason for residing in Baharestan is cheaper housing (35% of the interviewers). Closeness to Isfahan city (14.6% of the interviewers) and lower housing rental compared to Isfahan (13.2% of the interviewers). 49% of the inhabitants of Baharestan work in metropolitan Isfahan. 25.1% in Baharestan, 11.8% in other cities in Isfahan province and the rest (14.1%) in other provinces of Iran.

Some people from other parts of the country have invested in housing sector in Baharestan, as owning real property is considered a popular way of saving in Iran. At present, due too much construction, the space between Isfahan city and baharestan is filled with houses and other activities, converting Baharestan into a neighborhood connected to Isfahan city. This has increased the traffic load in Isfahan and Isfahan city-Baharestan road.

Actually Baharestan has not only failed in its mission for decentralization of Isfahan, but had added to the concentration of this city and has caused physical expansion of Isfahan. Baharestan is strongly dependent on Isfahan for economic, social and cultural services. About 69% of the inhabitants of Baharestan travel to Isfahan at least once a day for work, study, shopping, recreation and friends. 35% of the people supply their service needs merely from Isfahan. 16% believe that Baharestan lacks complete services. 28% of the people name lack of recreational facilities as one of the problems of the city. At present, in spite of achieving its population and housing goals, Baharestan is a dormitory town.

Some other problems that people have mentioned are: Poor quality of architecture and construction (figure-3), lack of vitality in public spaces, lack of mixed uses (such as commercial and health services), lack of social interaction between inhabitants, high cost living, poor pedestrian facilities, lack of nature in built environments, Uniform house and public space pattern, Social and cultural conflicts (contradictions), Inefficient public transportation, Absence of sense of place, Car-based life, High energy consumption, Lack of social capital, Natural environment demolish and .... All of them have caused the main crisis in this town: loss of identity; In spite of the relative success of the city, the inhabitants call Baharestan a city with no identity.

<sup>1</sup> Ministry of Housing and Urban Development

<sup>2</sup> Baharestan New Town

## CONCLUSION

According to study and results, the whole process of planning, design and implementation of new towns have to be reviewed. The focus of this paper is on the qualitative aspects, so it will present solutions about quality of urban environments. It's necessary to introduce a unique identity in city vision, it will trace on whole stages of process (allocation to implementation). It will create a clear and constant image of the city and make new towns more legible. The design strategies must be able to raise quality of life and standard of living by creating better places to live. It has to redound diverse, walk able, compact, vibrant, mixed-use communities.

Some useful strategies in urban planning and urban design of new towns or to improve quality of built environments (such as Baharestan), are: (a) Interconnected street grid network disperses traffic & eases walking (b) A hierarchy of narrow streets, boulevards, and alleys (c) High quality pedestrian network and public realm makes walking pleasurable (d) A mix of shops, offices, apartments, and homes on site. Mixed-use within neighborhoods, within blocks, and within buildings (e) Diversity of people - of ages, classes, cultures, and races (f) A range of types, sizes and prices in closer proximity (g) Emphasis on beauty, aesthetics, human comfort, and creating a sense of place; Special Placement of civic uses and sites within community (h) Human scale architecture & beautiful surroundings nourish the human spirit (i) Discernable center and edge (j) Public space at center (k) Importance of quality public realm; public open space designed as civic art (l) Contains a range of uses and densities within 10-minute walk (m) Transect planning: Highest densities at town center; progressively less dense towards the edge. The transect is an analytical system that conceptualizes mutually reinforcing elements, creating a series of specific natural habitats and/or urban lifestyle settings. The Transect integrates environmental methodology for habitat assessment with zoning methodology for community design. The professional boundary between the natural and man-made disappears, enabling environmentalists to assess the design of the human habitat and the urbanites to support the viability of nature. This urban-to-rural transect hierarchy has appropriate building and street types for each area along the continuum. (n) Most things within a 10-minute walk of home and work (o) Pedestrian friendly street

design (buildings close to street; porches, windows & doors; tree-lined streets; on street parking; hidden parking lots; garages in rear lane; narrow, slow speed streets) (p) Pedestrian streets free of cars in special cases (q) Minimal environmental impact of development and its operations (r) Eco-friendly technologies, respect for ecology and value of natural systems (s) Energy efficiency (t) Less use of finite fuels (u) More local production (v) More walking, less driving (w) Taken together these add up to a high quality of life well worth living, and create places that enrich, uplift, and inspire the human spirit.

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