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# An Investigation of New Towns Effects in Environmental Order (Case Study: East Azerbaijan Province of Iran)

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**Abstract**

New Towns think make after second world war as a paradigm to reduction some problem in metropolis cities. In different countries, new towns are constructed based on necessity and their functions. Nowadays, making new towns is not of course performed with the aim of realizing the notion of ideal habitation or Utopia, rather decentralization of large cities is its purpose and main goal. Nonetheless, this topic is differently viewed in Iran in comparison with other countries, and its utility and function in Iran is not the same as the real purpose of making new towns in the world. This article studies the country's population variations in recent decades and considers urban system of the country. It also analyzes the activities of new towns in recent years and eventually argues the necessity to make new towns in Iran. Also we are try to discuss about role of Sahand new town in North-West place of Iran about affect in spatial balance and Entropy. The agreement of this strategy with alternative ones, especially with the strategy of middle cities reinforcement, is argued as well.

***Keywords:*** Environmental order, New owns; Urban system; Iran; population; Centralization

**Statement of the Problem**

The original and still most weighty reason for building new towns, in the minds of their advocates and pioneering experimenters, was the necessity of reducing the concentration of people and workplaces in very large towns, which otherwise cannot be relieved of congestion, disorder and squalor and rebuilt on a fully healthy, socially satisfactory or efficient pattern.[1] A complementary motive was that new towns based on modern industry, in agricultural regions declining in populations owing to mechanization and other technical changes in farming, would bring fresh vitality and better services into such regions.[2] This double intention should be kept in mind. Too often the new towns are discussed as if they were meant only to be ends in themselves, almost irrelevant to the redemption or renewal of the existing cities, and ruthlessly indifferent to rural interests. They were never thus disassociated in the minds of their proponents.[3]

During the early years after the Islamic revolution of Iran and occurrence of the imposed war, extensive migrations started all over the country. Many farmers came to cities progressively because of economic stagnate in villages resulted from land reform and waning of seasonal economy.[4] In addition to farmers' migrations, there were widespread migrations from towns to large cities, mainly to the center of provinces. Configuration of the country's population was changed by these migrations which led to fast growth of urbanization in the country. According to these conditions and upon evaluating the trends, demographers predicted that the population of cities in Iran will double through the next 20 years [5].

Such a prediction could have different meanings for planners and decision makers; first, constructing towns through the next 20 years should be accomplished equal to present cities with regard to area, volume and space in order to reside applicant population, primarily the migrants.[6] Second, composition of the country's population balance between city and village had a drastic change and through next years, city population would outweigh village population, therefore the problem required a specific planning approach. Third, lack of planning and foresight for the great number of migrants to cities would result in doubled pressure on large cities, occurrence of different cultural, economic and social side effects, occurrence of serious social abnormalities, and vanishing of large cities' identity.[7]

Based upon the mentioned facts, during 1982-1992, Iranian ministry of accommodation formulated three significant strategies in order to encounter with problems of city population of the country, Improving the texture of inner cities with the purpose of attracting population proportional to their capacities and preventing the evacuation of old textures. Accommodation of city outskirts together with maintenance of agricultural land and bio-environmental resources.

According to the above strategies, identifying the capabilities and restrictions, determination of requirements, and establishing the laws based on native and national merits, the first act for making new towns was proclaimed in 1986 and

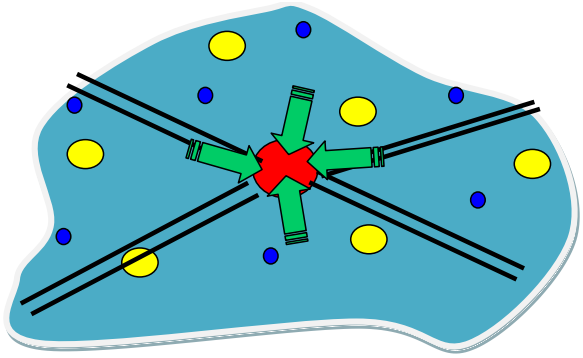

**Fig.1.** The first idea to establish New Towns

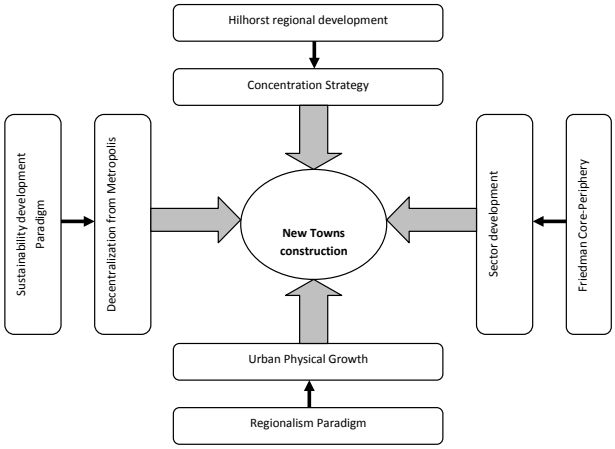


**Fig.2.** Basic think to reason of new towns construction

subsequently the New Towns Company was established in 1990 [8]. Improvement and renovation of inner texture of the existing cities for optimal exploitation of the city space has the highest priority among city extending methods. This model is also called "new town within a town".[9] Such a notion indicates large-scale improvement, modernization, and revival of city core extension .

In the case that improvement and renewal of inner texture of present cities is not sufficient for the increased city population, it is suggested to carry out continuous extension of these cities in places without any natural or artificial limits. In addition, when neither of the two mentioned suggestions satisfies the city extension requirements, it would be necessary to perform discontinuous extension of the cities [10].

An issue of significance considering the population changes and fast increase in the number of citizens is the necessity to plan for population overflow and their accommodation. If no proper planning is achieved for their accommodation, the result would be cities with uncontrolled mushroom growth and it will be consequently inevitable to pay the large cost of solving the problems of these accommodation places and their resultant social abnormalities.

**Table 1.** Population numbers and average annual country population based on year

| Average annual growth (%) | Population | Year |
|---|---|---|
| 0.6 | 7654000 | 1927 |
| 0.6 | 9707000 | 1937 |
| 1.4 | 12833000 | 1947 |
| 13.1 | 18955000 | 1957 |
| 3.1 | 25788000 | 1967 |
| 2.7 | 33708000 | 1977 |
| 3.9 | 49445000 | 1987 |
| 1.5 | 60055000 | 1997 |
| 1.6 | 70472000 | 2007 |

**Population Evolution of Iran**

Considering the available statistics and accomplished estimates of the country's population from 1882 to 1922, the rate of population growth has been very low in Iran.[11] This is attributed to natural inappropriate conditions, famines, and deadly infectious diseases. Low constant rate of population growth continued until 1922 while these conditions changed from 1927. An increase took place in population until 1957 and a growth rate of 3.1% maintained till 1967, whereas population controlling programs led to decrease in this rate in 1977 census. After Iranian Islamic revolution and applying new strategies with the aim of controlling the population, the mean annual growth rate had an increase and reached 3.9% in 1987 census. From 1992 to 2002, the population controlling strategies was executed again and resulted in decreasing the mean population growth rate to 1.6% during 1997 to 2007. Similar to population growth rate, the population number experienced low growth from 1882 to 1922 and reached from 7,654,000 to 9,707,000 persons. Afterwards, due to controlling fatality and improvements in health care which resulted from utilizing new equipments, the population number augmented very fast and ultimately reached 70,496,000 persons in 2007; in other words, population of the country has became seven times during recent eighty years.

**Table 2.** Population and country city numbers in general headcount between 1967 to 2007 years

| Urbanization rate | City growth rate | City numbers | City population | Sum population | Year |
|---|---|---|---|---|---|
| 37.96 | 36.7 | 272 | 9790 | 25778000 | 1966 |
| 47.04 | 37.1 | 373 | 15855 | 33708000 | 1976 |
| 54.30 | 33 | 496 | 26848 | 49445000 | 1986 |
| 61.31 | 23.4 | 612 | 36817 | 60055000 | 1996 |
| 68.46 | 66 | 1016 | 48245 | 70472000 | 2006 |

Also, the urban population had noticeable changes owing to increased population and reached from 37.9% in 1967 to 68.46% in 2007. On the other hand, in addition to cities' population, increased number of towns functions as another effective factor in changes of city configuration and space system. Therefore, an imbalance has occurred in urban network in several parts of the country.

Regarding the official statistics, there were 272 cities in the country in 1967, which indicated a 36.7% growth compared to 199 cities in 1957. As a consequence of dominant issues in population flows, this number reached 373, 496, and 612, in 1977, 1987, and 1997, respectively. The gradual growth ultimately yielded 1016 cities in recent census in 2007.

Despite the drastic increase in number of cities, the population density in metropolis is nevertheless still so high that the government has been forced from 2 decades ago to execute the strategy of making new towns. So far, from legislate the law about criteria for constructing new towns (1986) until 2008, 21 new towns have reached the running stage and some others have been approved and are in preparation steps or passing the official steps. It seems that such a growth in urban population will result in increasing urban population to be over 75% until 2022 and number of cities will exceed 1200.

Accordingly, the New Towns Company was established with the purpose of management of constructing new towns, managing the master and detailed plans of new towns and their partitioned maps, supervision on preparation of making buildings and urban installations, their exploitation, partnership with juridical and actual persons, issuing construction permits and enforcing the rules and standards of making installations, maintaining the rights and enforcing the authority of government over estate-owned land, supervision and control over land and buildings, providing the requirements for attracting non-government applicants, and resource management for investment, and has carried out a number of activities along with the above-mentioned objectives .

**Entropy Degree of Azerbaijan Cities**

Total review of entropy is evidence in network distribution towards relative balance. This process began in 1966 with 0/685 rate and it is increased in to the 0/712 rate in 2006 .So, modified variations of urban network had been fast from 1976 to 1996 and after it that had been very slow. The most irregular mode in distribution to be observed in 1966, so that just 36% the population. To be allocated for Tabriz city at this time. And other cities were main city centers at this case as follows. Orumieh 9/9% - Ardabil 7/9% - Maragheh 4/8% and Khoy 4/3%. Distributed degree in these cities was about 0/680 and other cities hadn't had any dynamical conditions and necessary abilities in population's attract.

In 1976, entropy coefficient to be increased in 0/687 as a balanced order. This variation is obvious in population distributes procedure as follows: Tabriz 35% - Orumieh 9/8% - Ardabil 8/8% - Maragheh 3/4% - Khoy 4/2% , Marand and Mianeh 2/1%. In 1976, productive way and work-force in transmitting in to agriculture the cities under urban service part are best examples in urban network variations at this period.

In 1986, change in high level of urban network made to improve entropy coefficient in balance mode. (Equal to 0/697) It is decreased to 33% in Tabriz and increased to 10/3% and 9/6% in Orumieh and Ardabil, respectively. Decreased distance

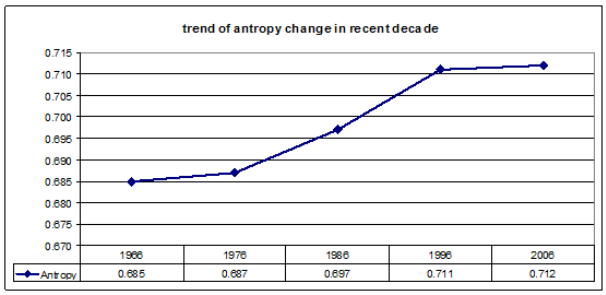


**Fig.3.** Trend entropy change in recent decades

is one of the main factors of entropy index in balance of urban network wore and that is obvious in first, second and third cities population as special in Maragheh, Marand, Khoi considerably.

In 1996, this was 0/711 as a balanced mode with stability and reasonable mode in the process. At this year, population to be reported as follows: Tabriz 31% - Orumieh 11.3% - Ardabil 8.8% - Maragheh 3.4% - Khoy 3.8%. This event has an important role in relative balance of urban network increasing upon past decades. Following chart is indicating these events and modified variations.

In 2006, these vases were similar to 1996, events under stability promotion in urban network considerably. Irregular degree variations were meeting to different urban levels. So, it is decided to grade the cities in no certain population range but basic data analyzing in entropy.

The cities with 50 to 100 thousand people have the most potential and the cities with low than 10000 people have the least potential. At this case, the cities more than 100000 people had been relative balance in popular at traction with elasticity rate about 1. This base to be considered in five ranges as follows: Top of 5000 people, top of 10000 people, top of 25000 people top of 50000 people and top of 100000 people cities. In these groups, there is a separated analyze in entropy in urban network. Entropy variations comparison to be given in following chart in different decades of urban grades. We can conclude two points from it as follows: In recent decades, balance to be defined in high levels of the city hierarchy with relative balance in motion. Medium and small cities haven't dynamical event.

**Evaluation of New Towns Functions**

The accomplished activities in construction of residential units were carried out by cooperative companies, mass construction, and individual parts, where a number of these projects were completed and the rest are yet in progress. Mass constructors, cooperative companies, and individual parts have gained 47%, 39%, and 13.9% of construction portion in new towns, respectively. Altogether, 275,342 residential units were constructed or are yet in progress. Besides, 7,654 non-residential service units were completed and 5,422 of such units are in progress till the first half of 2008. In other words, 13,076 non-residential units and 275,342 residential units were completed or are in progress in new towns of the country, which are as a whole 288,418 fulfilled units.

It is noteworthy about non-residential projects that a large number of these projects have commercial use and constitute 83.1% of all non-residential projects. Other projects and activities are mainly devoted to services and official uses. According to statistics published by New Towns Company,

about 12,277 hectares of land were prepared in the first half of 2008, mainly performed in Sadra new town around Shiraz with an area of 1795 hectares. Also around Tehran, 13.59, 10.32, 6.74 and 9.35 km2 of land have been prepared in Parand, Hashtgerd, Andishe and Pardis, respectively. Thus, 4000 hectares of land have been prepared around Tehran and offered for transfer.

Sahand new town around Tabriz with a prepared area of 10.35 km2 is another important new town in the country. Isfahan as the country's second metropole has prepared lands with area of 12.64, 10 and 2.45 in Baharestan, Poulad shahr and Majlesi, respectively, whose sum of land is 24.91 km2.

***Analysis of New Towns' Objectives and Evaluation of Their Success or Effect on Urban System***

As previously mentioned, construction of new towns was fulfilled with the aim of decentralization and controlling the population overflow from metropolis and their executive operations have been continued in the last two decades. Nonetheless, of great importance are evaluation of the effects of huge investment in new towns on their urban system, and how successful are these towns in attracting population. It is concluded from Table 1 that, approximately 3,880,000 persons were considered for 21 constructed or in construction new towns and it is estimated that until 2010, roughly 800,000 persons will be settled in these new towns. Even so, based upon the census, this population has been 356,900 persons until first half of 2008, which is even lower than half of the intended population to be settled by the end of the fourth development program.

Besides collectivity problems, it is of importance to point out that the urban population of the country was over 48 million persons in 2007, while only 7.9% (3.8 million persons) of this population will be settled in new towns. On the other hand, the decision was to settle 1.6% of this population in these towns by the end of the fourth development program; thus by calculating the present population of these towns, only 0.7% of the urban population of the country could be settled in new towns. The key question is that, excluding the construction of new towns, could any other strategy be a proper alternative in order to attract and settle this 0.7% of urban population?

Contemplating the urban system and considering the factors effective on the migration from small cities and villages, a much better strategy could be adopted for solving the country's urban network problem. Intermediate and small cities are potentially appropriate alternatives for replacing new towns and this strategy has been emphasized in national macro plans. In spite of this, pure modeling from conditions of European countries was carried out in making new towns. Consequently, it is nowadays reasonable to conclude that, construction of new towns in Iran has not been a successful policy. Table 3. Settled population until 2008 in new towns (http://ntoir.gor.ir).

## RESULT

Based upon the statistics published by the World Bank in 2007, the percentage of urban population has been 75%, 43% and 41% for developed countries, developing countries, and Asian countries, respectively. This is while 69% of Iran's population was settled in cities in the same year. What is observed in developed countries as urban percentage higher than 75% is completely different from the approximately 70% urban percentage in Iran. It seems that unlike the former, urbanity in Iran is more similar to urbanism rather than urbanity in its real sense. The results achieved from analyzing the available statistics and censuses of the country indicate fast growth of urban population which hence leads to an increase in urbanity in recent decades. The chief mechanisms contributing to increase of urbanity in Iran are commonly considered as natural growth, migration from village to city, village to town transformation, and confluence of city outskirts to the city.

The total number of Iran's population and its urbanity percentage has always increased during previous years. According to reports of the census in 2007, the total population of the country was 70,496,000 persons, which comprised of 48,245,000 persons (68.5% of total) being settled in cities, and 22,251,000 persons (31.5%) being settled in villages. The analyzed data indicates the fast growth of urbanity in recent fifty years. Such data also specifies the fact that, urbanity percentage has doubled and the urban population of the country has grown eight times compared to its value in fifty years ago.

The average growth rate of urban population was 2.26% from 1927 to 1937 and its maximum value belongs to the time period from 1947 to 1987 which was over 5% in these years. It should be noticed that, the growth rate of total population of the country was high too, and the urban population growth was to a great extent normal. From 1987, the decreasing average of total population growth rate coincided with a decrease in the average growth rate of urban population which reached 2.74% from 1997 to 2007. It is noteworthy that, the average of village population growth rate has become negative in the mentioned years, which mainly results from either migration of villagers or transformation of villages to cities.

The policy of constructing new towns with the purpose of balancing urban system continued in recent two decades and 21 new towns were approved and established. These towns were unsuccessful in attracting the population and only 0.7% of the country's population was settled in them. It was however expected in past decades that, the population load of large cities would decrease and be transferred to new towns.

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