



The role of green space in improving the environmental quality and an introduction to the sustainable development of cities

Mohammadreza Rezai AGHAMIRLOO¹, Mahdyeh NAKHAEI¹, Bashir BEIGBABAEI²,
Yoosof KARGAR³, Mohammad SALAHSHOURY³

¹Young Researchers and Elite Club, Marand Branch, Islamic Azad University, Marand, Iran

²Assistant Professor, Department of Geography and Urban Planning, Islamic Azad University of Marand

³MA of Islamic Azad University, Zahedan Branch, Department of Geography and Urban

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Abstract. Green space is the most beautiful Godsend that is given to human beings and animals. In general, the green space contrary to the meaning that it may create in mind is the only place that has no plant and trees but is a symbol of a community's cultural and social thoughts. Increasing urban development, modernization and urbanization 'Urban green space should be considered the most important factors of the stability of natural life in the modern urbanization. In other words there is an endless struggle between application and technology development on the other hand the preservation of vital elements such as water, soil, and green space. In such circumstances, enjoying nature and green space leads mechanical life to natural gifts and in addition to the sustainable development of urban, peace will be returned to the city life. This paper was written about the role of urban green space in improving the environmental quality and an introduction to the sustainable development of cities in Marand. The results indicate the fact that Marand as one of the central parts of cities, in recent years was influenced by several factors and have faced with several issues and problems. A severe poverty of green space capitation could be seen in Marand and as the population and city area increases the green space decreases and distances from the worldwide standards. This problem could be seen clearly in most of Iran's cities. Nowadays most of our country population lives in cities and the rapid increasing of cities and the suburb development caused the destruction of green space and gardens around the cities. These developments have caused the substitution of rural lives and virgin nature with the urban spaces. Marans also is involved in this problem, so paying attention to the green space is one of the necessities of urban planning and management.

Keywords: Godsend, Green space, Modernism, Environmental

1. INTRODUCTION

Nowadays, the importance and the role of urban green space in the life of the cities and their stability and physical effects in the urban systems and different efficiency of ecology, economic and social aspects are undeniable; As far as using of green space and its capitation is one of the key issues in planning and urban management. Consequences of urban development and the complexity of environmental difficulties and expanding the availability of green space are inevitable forever. Cities as focus activity centers and human beings lives in order to be able to guarantee their stability they have no choice except to accept the structure and function influenced of natural system. The green space as an essential and integral part of a unified body has a major role in the metabolism of cities that the lack of them can cause serious disorders in cities' life. Paying attention to the green space generally defined as urban respiratory lungs are not exaggerated of their functions but this metaphor is expressing its function at least in the sense of ecology of cities. Rapid growth of urbanism and the rule of industry based on new technology and trends toward the mechanical life are collaborated with the destruction effects of natural resources and herbal cover, changing of cultivated lands and gardens to the buildings with increasing of population and environmental pollution, lacking of balance and ecological system and the ability of well-being. On the other hand increasing incomes, development of transportation, increasing of car ownership, increasing of

* Corresponding author. *Email address: Mohammadreza Rezai Aghamirloo*

unemployment and etc. have increased the importance of parks and green spaces.(Zyari, 1384, 2)

Green space that forms a part of the face of the city as one of the real phenomenon is one of the first things that people have always been and will be in contact with it. This topic has the dimensions of environmental, social, cultural, economic and etc. This paper has considered the city's parks and green spaces in Marand. What draws more attention is low capitation of the green space, unfair distribution of these spaces in the effect and gradually eliminating of green space according to increasing population and industrialization of city. This problem shows the importance of study and research about using green space in this city.

Objectives of the study

- Paying attention to the urban green space in the city as one of the main urban using in cities.
- Encouraging citizens to participate in the creation and maintenance of green space as one of the components of a well city.
- Understanding and influence of parks and green space on how they improve and promote the hygiene mental, cultural, social and environmental issues.
- Study of the current situation of green space and parks in Marand ,and giving solutions and recommendations for restitution of its deduction and deficit based on national standards.

Research Methodology

The present paper is based on documents and data collection method. In documents method, taking notes, statistic records of information about the topic and referring to the government offices specially city hall, environmental protection organization, parks and green space organization

Different functions of urban green space

The functions of urban green space can be divided to 3 general parts:

1. Functions of urban green space in the construction of city body:

The group of green space elements that are taken as living construction of city body can be focused in small and large scale. In large scale that group of urban green space elements are discussed that designed for all the area of ecologic according to the function and efficiency. They cover all the urban green spaces. According to large scale the urban green space can be classified and discussed in framework of green belts, green areas and regional green places. The green place belt can undertake important functions:

- It determines the steps of urban development objectively and shows them.
- It functions as a green jungle in the city.
- It applies a separator effect on the city space.
- It services the citizens as a public amusement park and benefits the urban society from its various efficiencies.
- It functions as one of the features of the city according to its scale and form and in this way it improves the unity and identity of the city.
- Building of green belt around the city is focused beside the other functions.
- The green belt is always located at the edge of the city.
- Generally planning and designing green areas is started from the edge of the city and then is developed according to conditions and current needs in different ways.

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The green elements of intra city in other words public green spaces are able to collaborate different functions in contact to body construction of the city in tiny scale. Such as the following:

- Separation of urban areas (residential, commercial, industrial, recreational and so on.)
- Separation of different users, especially the users that are in conflict with each other.
- Preventing from building density.
- Highlighting main lines of the city.
- It makes a variation in drying and straight lines and geometrical forms in urban buildings. (Zamani, 1385,55)

2. Social and mental functions of green space:

The main aim of designing of urban green spaces in order to access to their mental and social effects is to closer the human being and nature. Everybody in different daily situations needs a few hours to relax. This need would also increase in the future with complexity of population and apartment living. From this point of view creation and development of urban green spaces that people can spend a few hours in peace without uproar of daily life is a social need.

3. Environmental functions:

This function usually leads to improvement of ecological situations. It should be noticed that the effect of green space to the environment when reaches to maximum that firstly the green space should be located in a suitable place secondly suitable trees should be planted in designing green space. This function includes the following points:

- Increasing of relative humidity and reduce the temperature.
- Conflicting with hot islands.
- Reduce the amount of lead

There are other functions such as decreasing air pollution, noise pollution and oxygen production and absorption of Carbon Di oxide and Founa and wind control.

Relative Increase of humidity and decrease of temperature.

Green space in the form of a tree due to the expansion of their leaf area than other forms of plant through sweating can increase the relative humidity of air and nicety of air. It is associated with calorie. So it reduces temperature. A 5 to 10 meter wide stripe of plants to decrease temperature 3to 4 degrees lower than the city down town. At the same time increases 50% humidity. Temperature differences that are caused in this way leads to a slight decrease in air pressure. This pressure decreasing causes winds with speed of 12 kilometers per hour and these winds are enough to change the weather of a big city completely within an hour. (Soltani, 1369, 28)

Conflict with the heat islands

Now researchers consider urban areas as heat islands because dark surfaces of land in the cities absorb 3 to 5 centigrade degrees heat of sun more than near lands and in this way they cause 30 percent of air pollution. In areas without tree that are mostly covered with buildings and plumbing system, the natural cycles are short and disorders in moving energy made them to heat islands which increase the pollution of the city.

Reduce the amount of lead

Trees are effective in reducing the amount of lead. Comparative trees with other forms of plant such as grasses and agricultural plants shows that trees have more ability to take lead 10 to 20 times more than grass and 2 times more than agricultural plants . The role of leaves and branches and even tree trunks in heavy traffic areas in populated cities and highways in the absorption of lead exhaust from cars is very important.

Air pollution

Green space, especially in the form of tree is very effective in air- pollution chemical. For using this function of trees while using resistant insensitive and species and in case of damaging their repair and restoration always should be considered.

Reducing noise pollution

Green space, especially trees are very effective in reducing noise pollution. They can be a good way of reducing noise to 4 dB in case of having suitable species. This role of trees is very important in big cities.

Oxygen Production and Carbone di oxide absorption

Trees play an important role in improving environmental conditions with these two functions. Each tree with an average longliving can purify Carbone di oxide three times more than the size of two single rooms while 30 to 40 square meters of the trees can provide needed oxygen of a person.

Fauna absorption

Green space leads the lifeless nature of the cities to natural systems and cause special fauna absorption that makes their lifeless space more tolerable.

Wind control

Green space, especially trees in case of suitable and purposeful planting can be effective in wind control in targeted parts and changing its direction.

Radiation and light reflection control

Green space not only can prevent radiation from the sun but also can prevent from annoying and stunning light reflection in cities.

Traffic control

Arrangement of green spaces is a contributory factor in traffic control in inter-urban routes. Planting trees in principle are very effective in guiding traffic as familiar signs in suitable places.

The beauty creation

Adornment of the cities and their utility is due to the beauty creation of green space in different forms for life.

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Cities' architecture

Green space is a suitable substitute for other materials used in architecture to divide fence creation space and private space and so on.

Trees and floodwater

Fast torrential flows and their management way is another major issue in countryside environmental studies and another field in economic discussion.

In result of increasing of impervious surfaces (roads and buildings) more water must be driven out of the city. Trees with absorption the water on one hand and guiding it to their limbs cause slowness of fast torrential flows and reduces the speed 3 times and on the other hand they reduce the cost of building guidance systems and torrential flows.

Preventing from soil erosion

Green space prevents from soil erosion and absorbs rain water and in this way repairs underground water aquifers and develop its piping.

Marand geographical location

Marand in terms of geographical location is situated at 45 degrees, 45 minutes and 30 seconds east from meridian and 38 degrees and 26 minutes north latitude longitude from equator. This city is located in west north of Azarbaijan Sharghi province in 75 kilometers to Tabriz the center of the province to Khuy and Turkey. According to relative location of Marand from north to Jolfa, from west to Khuy and Azarbaijan Gharbi, from east to Ahar and from south to Shabestar. The Azarbaijan republic and Armenia are its northern neighbors and its city's height from the sea is 1350 meters. Two current areas of this city surplus 1600 hektars. Marand is mostly mountainous area in a way that 2/3 of it are heights and 1/3 of it are flat and plane lands. The mountain part of Marand is made of two important mountains, one in north and the other one in south. The Arsbaran mountains are located in north of Marand that start from Ararat mountains continuing to west, east and separate Marand's plain from Jolfa's low plains. The high peaks of these mountains are as follows:

- 1- Neshan Kuh with 3370 meters height
- 2- Kiamki with 3414 meter height
- 3- Khaleli Dagh with 2646 heights
- 4- Kamtal that is a dug-out and high area and has a view to Aras.

The south mountain of Marand is Mishab mountains that it itself is a distributary branch of west and south mountains. This secondary mountain is related to Zagros Mountains in mutual borderline of Iran, Iraq and Turkey and it continues from the north of Orumiye lake to the south of Marand and then to Tabriz. The highest peaks are as follows:

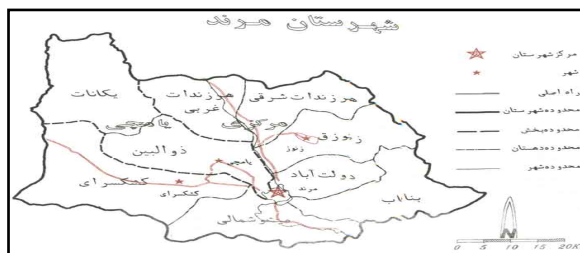
- 1- Ali Alamdar with height of 3155 meters.
- 2- Falak Daghi with height of 3125 meters.
- 3- Gachighalasi with the height of 2050 meters.

Except the above mentioned mountains there could be seen some heights in some parts that seem to be single but in fact are the following of the above mountains.

The most famous mountains:

- 1- Emamzade Daghi with height of 2300 meters.

- 2- Sangboran in the north part of Marand with height of 1722 meters.
- 3- BughdaDaghi with height of 2385 meters is located in Harzendatsharghi and Iyvar mountains are such mountains that are far from the major mountains and all together Bonab village includes the highest parts of the area in southeast of Marand. Two highest peaks of this village are: 1) Dogijan Daghi Mountain and Majid Abad, 2) Iri Daghi and Soghata. They are located in Bonab Village in order with the height of 2800 meters and 2600 meters. Marand that is the center of the city is 1420 meters above the sea level.
- 4- The plain fields of the city are also located 700 – 1500 meters above the sea level. Some scientists believe that the plain parts of Marand were a part of the sea connected to Orumiye Lake and Van Lake in Turkey in the past and the saline lands in the west parts of this city between Marand and Khuy can approve this idea.



Picture 1. Marand situation.

Source: the detailed plan of Marand, 2006

Marand green space user

City space has different users that the use of green space is important due to its influence on urban life. For studying green space in Marand and recognizing its shortcomings at first should pay attention to current situation. Some issues such as to what extent is green space capitiation and these spaces are scattered in what areas. Whether the distribution is done in according to its own principles and weather the access to the newly made spaces is included and servicing of these spaces is according to the needs of citizens. Marand is important due to being located on the way to European and Caucasus. It had physical development due to of increasing population. Population of Marand had a rapid growth in recent years; according to statistics Marand population in 1365 has been 71394 that almost in thirty years it became 5 times more. And in 1375 it is 106309 that in contrast with 1365 it shows a high growth of population. According to predictions this population in 1385 was nearly 15374. Marand’s area is extended in recent years with increasing of urbanization. Although Marand was about 500 hectares in 1358. Due to the rapid growth of population and increasing of houses, the area of Marand is about 1425 hectares now. The proper planning of field users is obligatory and necessary according to physical development and its population growth. The need of urban green spaces such as parks is increased as a result of increasing population and its density and increasing apartment living in recent years. Green spaces and parks have affected people’s lives which provide good life conditions and forbidding of social abnormalities. Nevertheless, in order to improve the environmental conditions of Marand residents and balancing the relationship of human beings and nature, developing and creating green spaces and avoiding destruction of gardens and repairing of the destroyed gardens are the main tasks of authorities and organizations responsible and above all of them is city hall.

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Picture 2. Available users in Mrand.
Source: the detailed plan of Marand , 2006

The current situation of parks and green space in Marand

Marand is currently governed by two urban areas. Urban green spaces and parks' affairs work with coordination of city hall and Parks and green spaces organization. Due to the absence of an independent organization there is no complete information about parks and green spaces in the past. There is just a little information about parks in city hall that were collected by the researcher. So there might be any kind of mistakes and contrastes in the preset research and it is tried to give more exact information to the readers from maps and direct observations. Unfortunately due to carelessness and weakness such as country politics, week management and urban planning and deficiency of urban plans. There is no green space in this area and went under the national and international standards. However the green space capitation of Marand has been increased according to the current statistics in comparison to 1372, but it needs planning, investment, management and more organizing to reach the national standards. The green space capitation of Marand currently is 2/2 square meter per each citizen.



Picture 3. Marand's garden.
Source: www.google map.com

The current situation of public parks and capitation

There are totally 9 small and big parks that are 136033 square meters together according to the statistics in Marand city hall. According to the Marand population that was 106309 in 1375 including population increasing and predictions this population was more than 120000 in 1383. It can be said that parks capitation in Marand is about 2/2 square meters that according to national standard (7-12) square meters and international standards (20-25) square meters is in a lower level.

General features of Marand's green spaces

Green spaces are divided to 3 parts: public, private and agricultural green spaces. Each of them has its own classification. All the above mentioned spaces in Marand include about 1780130 square meters or 178 hectares. So public green spaces such as streets, squares and mass planting

of Marand includes 125378 square meters of total area. But according to residential population in Marand that is more than 12000 Analysis of green spaces and Marand geographical capitation of green space



Picture 4. All green space of Marand that divided to public, private and agriculture green spaces
Source: the detailed plan of Marand, 2006

2. RESEARCH FINDINGS

Green space that forms a part of the face of the city as one of the real phenomenon is one of the first things that people have always been and will be in contact with it one of the main problems causes by physical the absence or lack of green and public spaces this increased environmental pollution on the other hand limit to spend leisure time for people Marand like other cities in the country is facing problems this research to answer this question that why the capitation of green space in Marand is lower than the standard level .how much has been closer to the standard level and whether green space capitation Marand had been declared in 1385 about 4 square meters in cith hall. But the survey based on field studies and found that the city's population in 1387 this was a mistake and the right amount is equal 2/2 square meters with this interpretation the problem of the lack of green space in Marand and its gradual due to lack of attention in next years will appear to be serious.

This study, with all its weaknesses is going to revealed this problem

This is answer to the research question and hypothesis testing wills bespecified.

Research question: is the proposed capitation plan was standard for green space in marand or not?

The proposed plan of green space capitation is 4 square meters.the capitations of green space area 2 meters and 2 meters area

Comparing capitation proposed plan suggested by ministry of Housing and Urban Development and also consider regional cold areas

Proposed close to the green space standard if properly perform it will seem reasonable unfortunately according to some of the proposed capitation .Objection that can be proposed scheme neighborhood and City Park.

3. CONCLUSION

Cities are considered as an active and dynamic system of human society which has many different elements to each of these elements is the effect on each other and changes in any of these elements make the other elements this systemical attitude to the city and ignoring other issues and their relationship to each other has led to an incomplete understanding and our understanding of phenomena the result was that the garden, plants,trees are an integral part of life in ...And in modern times and progresse of technology and industry as a result of

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urbanization.parks and urban green space according to their specific features and function officials, planners and urban managers.

Iran outside the borders of turkey, azarbaijan and Armenia.marand is rich in underground water.

4. RECOMMENDATIONS

- 1-Given enough funding for land purchase to expand green space and equipment.
- 2-Preventing the destruction of private gardens and conversion of agricultural -land to other uses and support of the owners of orchards and gardens to prevent drying in case of legal action by offenders.
- 3-Control urban development and the development of vertical rather than horizontal development.
- 4-Make appropriate equipment and accommodation in parks and urban green space
- 5-Provide adequate training·enhancing the culture of the people.
- 6-Design and construction of green space and parks
- 7 Emphasis on the safety of parks provide a healthy environment for families and all segments of society .
- 8 Use of experts to select plants species on the basis of type,size and shape of trees to different climate.
- 9 Inform managers in terms of environmental issues and pay attention to the quality of urban life.
- 10 Planning to reduce .

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