



An investigation of objectives and problems of Shiraz green belt

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ABSTRACT

Green belt is defined as a narrow green area surrounding an urban area. Shiraz green belt has been developed through 9 projects with a variety of purposes since 2005. The development of green belt is being considered in a number of Iranian cities, and therefore, investigation of Shiraz green belt's purposes and challenges could contribute to an appropriate planning by decision makers. The main purpose of this study was to study the objectives and problems faced by Shiraz green belt. Data were gathered through in-depth interview with 5 project managers and the person in charge of the whole project, documents provided by Shiraz Organization of Parks and Green Areas, and direct observations. Data gathered through interviews were analyzed through coding and classification. The main objectives of the project were associated with environmental purpose, and economic and social purposes placed in lower priorities. Preventing urban area extension, improve air quality within urban area, conservation of resources, greening urban area, provision of employment opportunities and developing recreation areas were reported by the respondents as the objectives. Most of the problems stated by the interviewees were related to planning and environmental issues, followed by cultural, legal and technical issues. Inappropriate planning, drought and lack of access to water, and inadequate environmental knowledge and awareness among citizens were reported as the main problems, followed by, budgeting difficulties and soil related issues.

Key words: Green belt, Land use, Environment, Shiraz, Greening

INTRODUCTION

The concept of linked parks or green routes in North America goes back to nineteenth century. In Canada, the green routes areas have been specifically developed in past 40 years Green belt is one of the recognized concepts in land use. Many experts believe that the idea of green belt is first was introduced by Ebenezer Howard in early twenties century in order to developed the gardens around London (Tang, et

al., 2007). In 1898, Ebenezer Howard suggested the planned garden cities around residential, industrial and agriculture areas and it was surrounding the London as a green belt. In 1926, CPRE¹ was one of the first organizations to combat urban sprawl. In 1935, green belt policy was proposed in the official regional planning in London for the first time. By 1959, green belt concept firmly supported by the national planning and policy and in 1955, the green belt policy in England was appointed to the ministry of housing and local government (Natural England & CPRE, 2006). Obsorn in 1969 has defined the green belt as a narrow green area around the city. The concept of green belt usually includes a variety of purposes all over the world, but in general it can be said that all the green belts following these objectives: 1) to control urban sprawl and optimize urban landscape pattern (Yokohari et al., 2000) 2) Improve urban environmental conditions such as air purification, adjusting the local microclimate, water resource conservation, restoration of degraded ecosystems and increased biodiversity (Bolund & Hunhammar, 1999). 3) create an environment for recreation 4) creates an environment for the provision of educational services by recognizing potential of green belt policy (Robert, 1995). The other goals are considered for green belts that are: recovery of damaged land that is left by old owners, using lands for the purpose of agriculture and silviculture, help to improve public health, response to climate change, make a place for holiday and tourist opportunities and create opportunities for develop renewable energies (Land Use Consultants for the Green Arc Steering Group, 2004; Mundie and Dyett, 2007). In Iran, this concept has recently been considered by city officials and experts. Some cities have taken measures to develop green belts or have planned for it. Shiraz started to build green belts in 9 sub-projects with different purposes from 2006. Planting and good maintenance of the trees around the city can make a green ring so, it becomes totally beautiful and different compare to past. Green belts will certainly face challenges and difficulties. Sometimes these difficulties made problem during the plan and sometimes green belt bring benefits that need to be examined in order to make good use of it. The goals of the project and the factors to achieve their goals can be very important. It is important that the design of this study has implications for the social, environmental, economic and urban effects. Analysis of the advantages and disadvantages of the implementation of the project and the impacts can make it much better than before and can eliminate problems in the fields provided. Not only in Shiraz, but also in the other cities of Iran like Tehran, Charmahal, Qom, Kurdistan, Sabzevar, Ahwaz and Mashhad have been attempting to create a green belt (Soltani, 2010; Anabestani and anabestani, 2010; Tehran Organization of Parks and Green Areas, 2011). Since the identification of goals and difficulties in creating green belt is low in the country and in the number of city the development of the green belt is concern, the state of objectives and challenges could properly help planning official and experts. Since most of the text that is available in Iran about green belt is mostly news and information text and there is no scientific research, such study could be important for researchers to conduct scientific research on this subject. Therefor the aim of this study is to investigate the objectives and challenges of Shiraz green belt from the prospective of experts of this project.

MATERIALS AND METHODS

In order to collect the data that is required for this descriptive research, we use the method of in-depth interviews with 5 sub-project managers and project managers. Then we investigate the documents in Shiraz Organization of Parks and Green Space and us photographing and observation. The analysis of the interview data is done by coding and the classification of schemes was carried out in two parts of goals and problems. For this purpose the interview and the recording of the interview was written down on the paper. Then one of the authors (L.M.) classified the goals and the challenges and was coding the classes.

¹ Campaign to Protect Rural England

In the final stage the second author (N.Z-M) investigated the coding and classifications and used the developed codes and classification to analyze the goals and challenges of the project.

Shiraz Green Belt Project

Great cities in Iran like the other world’s great cities, constantly undergoing illegal and uncontrolled development and the most successful way to prevent this phenomenon is to build green belt surrounding the city. So, one of the objectives of green belt is land tenure outskirts of the city and make the city safe and prevent the extension. Shiraz green belt project is consists of several sub-projects like Baba-kuhi (400 acres), Kiyab abad (623 acres), Golestan (1181 acres), Nour park (300 acres), Derak 1, 2 (6096 acres), Barmshour (2197 acres), Boustan (500 acres) and Dehshikh (620 acres) which are like a green ring surrounding Shiraz city (table 1). Project goals are in three categories: social, economic and environmental.

Table 1- sub-projects, predicted and performed area and the cultivated plants in the green belt

Row	Sub-projects	Area that is predicted (acres)	Performed area (acres)	Cultivated plants
1	Baba-kuhi	400	350	Olea, Pinus and Cupressus
2	Kiyab abad	623	400	Olea
3	Golestan	1181	200	Olea
4	Nour park	300	280	Olea, Amygdalus
5	Miyaroud	50	50	Olea
6	Derak	6096	800	Amygdalus, Quercus
7	Barmshour	2197	1200	Olea
8	Dehshikh 620	600	Olea	

Reference: research findings



Figure 1- a view of Derak (left) and Kiyab abad (right) sub- project



Figure 2- a view of Golestan (left) and Nour park (right) sub-project

RESULTS AND DISSCUSION

Objectives

Most statements on the survey results related to the goal of project (16 cases) were associated with environmental cases; two cases were related to economic issues and two cases related to social issues. Among the primary subjects, preventing the urban sprawl (6 cases) and improving urban air, were reported by the greater number of interviewees. Then resource conservation (3 cases) and greening the city (3 cases) are the next ranks. Environmental goals of this project included preventing soil erosion, removal of suspended pollutants, water conservation and increasing green space per capita from 9.82 to 85 m². Shiraz as one of the polluted cities needs the green space to absorb pollutants and CO₂ to reduce the respiratory diseases neurological diseases and mental fatigue. In addition, plants of this area can produced a much amount of oxygen. Additionally, it will provide a safe environment for many species of animal and birds. In the past two decades, due to the urban development and the destruction of natural watershed, the city has been affected by flood risk in the rainy season. So, Extensive tree planting in this area can prevent flooding. Protect the city from capturing city boarders and prevent extension are the other objective that has been expressed by a number of interviewees. Two of the statements expressed by interviewees were relevant to create employment and income (economic objectives), due to the high unemployment in the city. This project will create jobs for 1,560 people in agriculture and horticulture. *Oliva sativa varshenge* species is used in some parts of this project that is compatible with Shiraz climate and the fruit and oil is the economic value of the product. According to official projections regarding the economic justification of the project, the average rate of return on investment for any sub-projects related to major projects is seventeen percent and its return period is 9 years old. In addition, construction period of 13 hectares of olive groves at least will be created 910 jobs and maintain wooded areas and trees will create 650 jobs. Manufacturing and processing industries will create indirect employment opportunities too. Also it has provided recreational space for local and foreign tourists. Existence of good views of the mountain range overlooking the city and the archaeological will provide the opportunities for investors to do activities about tourism related matters. Two of the interviewees were introduced increased recreational environments as the important goals of the project. There are some special circumstances in the northern lands like Baba-kuhi and Qale bandar well that has created opportunities for investment. Topography of some sub-projects is appropriate for specific exercises like ski on grass, kite surfers riding,

ski lift and trap cabin facilities, including the future plans of this project (Shiraz Organization of Park and Green Space, 2010).

Table 2- Objective of Shiraz green belt project from the view point of sub-project's officials

Objective (repetition)	Primary subject (repetition)	Core subject (repetition)
Prevent urban sprawl (3)	Prevent urban sprawl (6)	Environmental (16)
To prevent capturing and land ownership (3)		
Green cover development (3)	Greening the city (3)	
Watershed goals (1)	Conservation of resource (3)	
Prevent soil and wind erosion (2)		
Air filtration (4)	Improve the urban air (4)	
Employment creation and income (2)	Employment creation and income (2)	Economic (2)
Expanding recreational environment (2)	Expanding recreational environment (2)	Social (2)

Challenges

About the problems of the projects, most items related to both planning (6 cases) environmental issues (6 cases). Then cultural issues (4 cases) and technical and legal issues are the least (3 cases). Among the primary subjects, poor planning, drought and water supply, and poor environmental culture of people, each with four Repetitions as the most frequent items. Technical issues and problems related to land ownership are next with three replications and finally, funding problems and other problems related to soil structure are the least in the project with two replications. All the problems mentioned by the respondents can be seen in table 3.

Table 3- challenges of Shiraz green belt project from the view point of sub-project's officials

Objective (repetition)	Primary subject (repetition)	Core subject (repetition)
Funding problems (2)	Funding problems (2)	Planning (6)
Do not performed the principle of land use planning (1)	Poor planning (4)	
Official current lack of information (1)		
Lack of proper planning (1)		
Technical issues interfere with existing policy (1)		
Lack of water supply (4)	Drought and water supply problems (4)	Environmental (6)
Poor soil (1)	Soil problems (2)	
Poor soil structure (1)		
Waste dumping by people (1)		
Fire (3)	Poor environmental culture of people (4)	Cultural (4)
The lack of quality seedlings (1)	Technical problems (3)	Technical (3)
Existence of barrier and rocks (2)		
Opponents (3)	Problems related to land ownership (3)	Legal (3)

According to the research results, one of the most important problems in this project is the problem of water supply. The water resources in sub-project provided by: Baba-kuhi has 2 wells, Kiyab from river, Nour Park has 2 wells, Golestan has 6 wells, Derak from Nahre Azam's river, Barmshour has 4 wells and Boustan from the water of Saadi's aqueduct (Shiraz Organization of Parks and Green Areas, 2011). Currently, due to the drought problems and other problems such as the location of some projects on highlands and difficulties to deliver water for them, maintenance of cultivate plant were faced challenges. It is suggested that cultivate the plants according to the principle of land use planning and habitat of the trees in different height in order to minimize water irrigation. Also it is proposed to be used recycled water instead of water canals, wells or rivers because it is the source that is always available for the great cities and in some cases it is reduced the usage of fertilizer. Of course, care must be taken in order to consults experts about this subject. One of the problems caused by visitors is the fire problem in the region, which causes loss of trees planted and creates a risk to tourists. Prior to this, fire occurred in one of the sub-projects and because the region is surrounded by trees and also existence the wind, the fire spread quickly all over the region. The fire was so extensive that the firefighters were not able to contain it. And finally flame was controlled by popular participation. But finally, two acres of area has been eliminated. To avoid this problem it is recommended to run the program of environmental education and public participation, so that tourists themselves avoid to lightening fires. Technical problems such as lack of responsibility, lack of proper design, do not using experts and the lack of land use planning principles was stated by some interviewees. It is suggested that using of qualified personnel and also published paper and data based should be available for executives. In this way, the best condition will be appear for observing the principles of sustainable development and the use of native species due to the topography of the area is provided and the subsequent problems like trees maintenance costs, water pumps and energy to keep them will significantly reduce. If at any height planted the proportional species, the seedlings will reduce maintenance problems. It was observed that same species have been used in different heights. Due to the soil structure and texture problems it is needed to protect some of the high gradient region and in other cases suggest that the species that are consistent with the soil particles. Sometimes considering technical issues interfere with the policies of a particular species that is considered, which sometimes endangers the stability of the region that must be provided coordination between these two subjects.

Conclusion

In this study we analyze the goals and problems of the city green belt by interviewing sub-projects officials, reading document and observation. Research findings showed that the main objectives of this project are associated with environmental issues and social and economic issues were the next category. Among the primary subjects in order of importance, preventing the spread of cities, improve city air, resource conservation, greening city, employment and income and recreational place were respectively. More items related to planning and environmental problems related to the project and then the cultural, legal and technical groups were become as the next categories. Among the primary subjects, lack of planning, drought and water supply, poor environmental culture were the main problems of the project and then Problems related to land ownership, funding, and problems related to soil were less important respectively. Because in the other parts of the country, the projects are being implemented with the same goals, investigation of objectives and challenges can contribute to have the proper planning in the other parts of country.

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