

DEVELOPMENT AND MANAGEMENT OF GREEN SPACES ON SUMUNDRI ROAD, FAISALABAD : A CASE STUDY

Adnan Younis, Atif Riaz, M. Qasim and Shahzad Akhtar
Department of Horticulture University of Agriculture, Faisalabad, 38040, Pakistan.

Green spaces within the city play a key role in the social, economic and environmental aspects. They add natural beauty to urban areas and merges the habitat where people, plants, birds and animals live. Present research project was on establishment of a diverse, acceptable and sustainable green spaces and to facilitate public debate about the functions of green spaces. Public perception on green spaces was also studied through social survey.

Key words: Green spaces, environment, benefits of green spaces

INTRODUCTION

The expansion of human activities into the natural environment, manifested by urbanization, recreation, and industrialization, results in increasing uniformity in landscapes and consequential reduction, disappearance, fragmentation or isolation of habitats and landscapes. The increasing exploitation of land for human use has greatly increased the environmental problems in urban areas.

Urban green spaces are understand public and private open spaces in urban areas, primarily covered by vegetation, which are directly (e.g. active or passive recreation) or indirectly (e.g. positive influence on the urban environment) available for the users. The provision, design, management and protection of urban green spaces are at the top of the agenda of sustainability and livability. Urban green spaces play a key role in improving the livability of our towns and cities. The quality and viability of cities largely depend on the design, management and maintenance of green as well as open and public spaces in order to fulfill their role as an important social and visual focus. Urban green spaces are not only an important component in housing areas, but also in business, leisure, retail and other commercial developments. The quality of green spaces helps to define the identity of towns and cities, which can enhance their attraction for living, working, investment and tourism. Therefore, they can contribute positively to the competitiveness of cities. From the *social perspective*, particular types of green space can offer a bigger diversity of land uses and opportunities for a wide range of activities, help to foster active lifestyles, and can be of real benefit to health. Well-managed and maintained green spaces contribute to social justice by creating opportunities for people of all ages to interact (Scottish Executive, 2001). Urban green spaces emphasize the diversity of urban areas by reflecting the different communities they serve and meeting their varying needs. They enhance cultural life by providing venues for local festivals, civic celebrations and theatrical performances.

Urban green spaces provide safe play space for children (Jacobs, 1961), contribute to children's physical, mental and social development (Hart, 1997) and play an important role in the basic education of schoolchildren with regard to the environment and nature. From the *planning perspective*, a network of high quality green spaces linking residential areas with business, retail and leisure developments can help to improve the accessibility and attractiveness of local facilities and employment centers. Well-designed networks of green spaces help to encourage people to travel safely by foot or by bicycle for recreation or commuting (Scottish Executive, 2001). Furthermore, well-designed urban green spaces provide a barrier to noise and can function as a visual screen (Dole, 1989). From the *economic perspective*, a green space might deliver products such as wood or fruits and also compost and energy as a result of urban green production. Their presence can create an increase in the economic value of an area and provides new jobs. From the *ecological perspective*, urban green spaces moderate the impact of human activities by, for example, absorbing pollutants and releasing oxygen (Hough, 1984), contribute to the maintenance of a healthy urban environment by providing clean air, water and soil (De Groot, 1994), improve the urban climate and maintain the balance of the city's natural urban environment (Stanners, 1995). They preserve the local natural and cultural heritage by providing habitats for a diversity of urban wildlife and conserve a diversity of urban resources. Despite the enormous benefits that urban green spaces provide there is a serious lack of information about the quantity and quality of urban green spaces. However, with the new integrated approaches to combine strategic planning for green spaces with innovative design and delivery and the active involvement of the community at all stages, urban green spaces can be part of an '*urban renaissance*' (DTLR, 2001).

Faisalabad is the third most thickly populated and biggest revenue generator city of Pakistan. After partition, massive city sprawl because of urbanization

and industrialization has been seen. There were only a few green spaces in city which were far below the world standards. Recently Municipal Corporation Faisalabad has made a master plan to increase the aesthetic qualities of the community, and to develop standards which ensure adequate open green spaces and landscaping in residential, commercial and industrial areas. Presently, utilization of waste lands as green spaces are one of the main sectors targeted for action by them and many projects are in progress. The objectives of the present study were to make the plan and design of the site and afterwards execute the design and to study the public perception that how they perceive the green spaces, explore the possibilities of community participation in the establishment and development of green spaces. It is also aim of the study to identify problems associated with planning and development of green spaces and find out possible remedial measures to overcome the constraints in development of green spaces along with provide a guideline for future planning.

METHODOLOGY

Sumandari road was selected due to its importance because it is one of the important gateway to city and it links Faisalabad with other important cities.

Study was carried out in two phases:

- Planning, designing and installation of plants in green space.
- Studying perception of the people.

Planning, Designing and Installation of Plants in Green Spaces

Designs for the green spaces understudy were made with the collaboration of Municipal Corporation Faisalabad and Punjab Beverages Co. (Pvt.) Ltd. such that it identifies the community's goal for enhancing the gateway to city and promoting the green space potential. Such plants were selected and arranged that were compatible and suitable for specific function, whether this is for aesthetics or screening.

Points that were considered to make a sustainable design are soil conditions, local environment and low maintenance cost. Afterwards these designs were executed with the help of Municipal Corporation Faisalabad.

Sampling and Data Collection

A questionnaire was developed to get required information through open ended and closed ended questions. Interviews were conducted with 120 visitors of the green spaces who were selected randomly. Questionnaire contained the personal questions, opinion questions and management questions about the green spaces. Data was collected in evening and morning time in suitable visiting hours.

RESULTS AND DISCUSSION

Planning, Designing and Installation of Plants in Green Spaces and Squares

Designs for the green spaces and squares were made with the collaboration of Municipal Corporation, Faisalabad and Punjab Beverage Co. (Pvt.) Ltd. Only those plants were selected which were hardy, compatible to roadside environment and appealing to eyes. Plants selection and planting design are obviously important to the overall success of any landscape design. Plants must be selected and arranged, so species are compatible and suitable for specific function, whether this is for aesthetics, screening, etc.; but plants should also be chosen and placed with maintenance considerations in mind (Jeff, 1999).

Data Stratification

Based on data analysis following groups strata of respondents were identified.

Table 1. Strata of Respondents

Characteristics/ category	Number of respondents	
Age (years)	Frequency	Percentage
Below 20	20	16.7
21-40	79	65.8
Above 40	21	17.5
Total	120	100
Education		
Uneducated	11	9.2
Low educated	53	44.1
Highly educated	56	46.6
Total	120	100
Sex		
Male	82	68.3
Female	38	31.7
Total	120	100
Profession		
Govt. job	7	5.8
Private business	45	37.5
Private job	21	17.5
House wife	21	17.5
Student	16	13.3
Others	10	8.3
Total	120	100

Respondents Opinion on Green Spaces along the Road

The respondents were asked about their liking or disliking of green spaces on the road. Results showed that in total 99.2% people liked to see green spaces along the road. Only 0.89% had shown their disliking by saying that it creates problems for traffic. As evident from the survey results that majority of people liked to see green spaces along the roads. The reason for liking green spaces along the road could be attributed to several benefits related to plants such as reduction in pollution, glare control and creation of comfort zones. Benefits associated with plants were also reported by Herrington (1985).

According to Vashney and Mitra (1993) green spaces along the road side provide aesthetic attenuate noise, improve the micro climate and effectively reduce particulate pollution. These green spaces serve as screens to provide privacy and as well as serve as wind breaks. Along with these benefits and aesthetic roles, green spaces reduce temperature, noise and suspended particulate matter (Harris, 1992; NUFU, 1998).

Choice of Respondents on Plantation in Green Spaces

Respondents were asked that what kind of plants would they like to see in green spaces. From results it was found that in central spine majority of the people wished to see flowering plants. In roadside green space respondents liked big shady trees, while in squares, majority of people wished to see flowering plants. Data analysis showed that flowering plants were the first choice among majority of groups. Reason could be that colorful flowering plants are appealing to the eyes and reduces the impact of asphalt and concrete. Plants and flowers can improve the quality of life and give greater insight into the nature of man and his interaction with/dependency on the natural environment (Shoemaker *et al.*, 1991).

Analysis showed that in roadside green space respondents preferred big shady trees. Reason for liking big shady trees is due to severe summer in Faisalabad and they thought that it protect them from direct sunlight and glare. Data also showed that majority of people did not like big trees in central spine reason could be that it cause hindrance in traffic and can increase road accidents.

Table 2. Choice of Respondents about Plants in Green Spaces

Plants	Frequency	Percentage
Trees	62	51.7
Shrubs	16	13.3
Flowering plants	30	25.0
Seasonal plants	12	10.0
Total	120	100.0

Opinion of the Respondents on Different Landscape Elements in Green Spaces

To develop an understanding on facilities in green spaces which people wish to see, they were asked to give their opinion. Data analysis showed that (37.5%) people liked to see lights followed by water tank (36.66%) and dustbins (34.16%). Other facilities which people desired to see in roadside green space are sitting places (21.66%), jogging track (19.16%), grassy plots (18.33), fountain (17.5%), water fall (17.5%), parking (15.83), security system (12.5%) and children playing area (4.16). (Table 3). Child play area was thought essential component of green space by majority of people. Reason could be that, their children, can be spent their time there in spite of wandering in streets. Installation of water tank was also appreciated by respondents because they felt difficulty in drinking water in summer. Respondents also wished to see jogging track in roadside green space for exercise. Reason of liking lights could be that it eases the movement of people in green spaces at night. From the results it is found there was a clear consensus among the respondents that effective and usable green spaces are scarce. There was a general idea among participants that the potential exist for appropriate development of green spaces in Faisalabad. The respondents felt that there is a need for integrated and coordinated efforts to create new and enhance existing green spaces within the city. A change in the concept regarding green spaces has been noticed. Green spaces are not only seen as green patches but also viewed a place different facilities such as walking, playing, jogging and many others. The respondents also viewed that at the time of establishment of green spaces the involvement of people at different stages such as planning, designing and installation of plants is vitally important.

Table 3. Perception of People on Different Elements in Green Spaces

Facility	Frequency	Percentage
Fountain	21	17.50
Waterfall	21	17.50
Grassy plot	22	18.33
Jogging track	23	19.16
Parking	19	15.83
Dustbins	41	34.16
Lights	45	37.50
Security system	15	12.50
Water tank	44	36.66
Sculptures	03	02.50
Sitting place	26	21.66
Children play access	05	04.16

Benefits of Green Spaces as Described by Respondents

Respondents were asked what changes in environment were brought by these improvement. Options were enhance beauty, control pollution, control encroachment, refreshment of people and increase greenery of the area. Results showed that majority of the people (70.8%) had mentioned that well managed green spaces enhance beauty of the community surroundings. According to (17.5%) people, green spaces help in controlling of pollution, while (5.8%) people said that these help in refreshment of people and only (2.5%) people said that it help in controlling encroachment. (Table 4)

Table 4. Opinion of the Respondents about Benefits of Green Spaces

<u>Improvement</u>	<u>Frequency</u>	<u>Percentage</u>
Enhance beauty	85	70.8
Control pollution	21	17.5
Control encroachment	3	2.5
Refreshment of people	7	5.8
Increase greenery	4	3.4
Total	120	100.0

Results of the survey have clearly shown that highest percentage of the respondents acknowledged that green spaces enhance the beauty of area. Mark (1993) also observed that green spaces and other landscaping add beauty to an urban area. These also help to control pollution and increase in community

conformable to live and work help in purifying the air, moderate the temperature through shade or mind blocks, reducing glare and noise, removing pollutants from the air, screening unattractive sights and increasing relative humidity.

Establishment and Maintenance of Green Spaces

Respondents were asked who should be responsible for the establishment of green spaces in the city. The reason of asking this question was to find out the active groups and agencies for the establishment of green spaces. The choices were private firms, general public, nearest community, NGO's and government. Recently, private organizations particularly industries took active participation in development of green spaces. The aims behind their active involvement were to beautify the area and to publicize their products. Their efforts were highly appreciated by the respondents and they desired that these should be continue in future. About 37.5% people said that private firms were obligated for the establishment of the green spaces. According to 5.0% people it is the liability of the NGO's to establish green spaces while (4.2%) and (2.5%) people said that general public and nearest community should be responsible for establishment. (Table 5)

From the results, it was found that majority of people viewed the government is responsible for the establishment of green spaces but for sustainable development, people and govt.. are equally responsible.

Table 5. Opinion of Respondents about Responsibility for Development and up Keeping of Area

<u>Agencies</u>	<u>Establishment</u>		<u>Care & management</u>		<u>Security</u>		<u>Cleaning</u>	
	<u>Freq.</u>	<u>%age</u>	<u>Freq.</u>	<u>%age</u>	<u>Freq.</u>	<u>%age</u>	<u>Freq.</u>	<u>%age</u>
Private firms	45	37.5	20	16.7	14	11.7	7	5.8
General public	5	4.2	19	15.8	9	7.5	22	18.3
Nearest community	3	2.5	7	5.8	7	5.8	7	5.8
NGO's	6	5.0	5	4.2	3	2.5	5	4.2
Government	61	50.8	69	57.5	87	72.5	79.0	65.9
No response								
Total	120	100	120	100	120	100	120	100

pride.

Respondents also viewed many other benefits like controlling pollution and providing a positive physical surroundings. In the present world scenario, there is increasing awareness among masses about the quality of life in urban environment. Many ecologist have stressed the importance of urban green spaces for improvement of physical surroundings of urban areas. Neighswonger (1975) found that plants provide a positive physical surroundings in which it is more

SUGGESTIONS

- Number of flowering plants should be increased particularly in squares.
- Plants having dense shade should incorporated in roadside green space, so, that pedestrians get some relief from scorching heat in summer.
- Weak and fragile trees should not be planted along roads as they can easily fall.

Development and management of green spaces

- Paved walkways should be built to reduce damaging the grass and plants in central spine.
- Landscape features which have their functional utility like child play area, dustbins, lights and jogging track should be incorporated in roadside green spaces.
- Management of the plantation should be improved, and well skilled and efficient persons should be employed for the care and management of the green spaces.
- For sustainable development, community should be involved in plantation and other developmental aspects of green spaces.
- Private investors should be encouraged for the improvement of squares as public administration is very often faces shortage of resources.
- To enhance the public awareness regarding green spaces, steps should be taken for the effective planning of green spaces.

There is a need to clearly define a well understood and interconnected management regime and to assign clearly the responsibilities and accountabilities at all levels. Without such actions performance measurement on any new environment management initiatives will be difficult if not impossible.

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