

# Institutionalizing Urban Farming at Neighborhood Level (Micro Level) in Pakistan; A Case Study of Johar Town Lahore

Rabia Shouket

University of Engineering and Technology, Lahore

**Abstract:-** In many developing countries, the process of urbanization is accompanied by an increase in urban poverty and a polluted environment, increasing food insecurity and malnutrition, especially in children, pregnant and lactating women. Unemployment rate augmented. Urban agriculture offers opportunities to improve global food supplies, sanitation, local economies, social cohesion and environmental sustainability. Urban agriculture exists in different agricultural systems around the world. Between 25 and 30% of city dwellers participate in the food sector of people around the world. With the increase in the urban population and the migration from rural to urban areas, urban agriculture is increasingly recognized for its benefits and services. The lack of practical knowledge of urban agriculture somewhat hinders the viability of the enterprise. Here, the constraints and potential of urban agriculture in the city of Johar Lahore are analyzed and professionals were interviewed to prepare guidelines for all on urban agriculture. In this paper an area of Lahore was studied to assess the potentials and constraints of urban farming in Johar town. In the light of results, it is concluded that people are willing to take part in such activities and they have space to do so. They need proper guidance and awareness to do so. Government should focus on institutionalizing urban farming to create Clean green Pakistan where people can grow their own food in clean and healthy way.

## I. INTRODUCTION

One of the fundamental problems in Pakistan today is to ensure that the poor eat healthy and organic diets. For the urban poor, food prices are so high that access to quality food is virtually impossible. In addition, Lahore is the second largest city in Pakistan and the largest city in Punjab is facing food quality issues and easy access to high quality food to meet the growing population of the city. Urban agriculture helps rural communities overcome their food dependency. In the developing world, urbanization is rapidly progressing, most of the population lives in urban areas, and these areas cannot feed and hire so many people, so there is an urgent need. Promotion of urban agriculture in developing countries.

Urban farming can play an important role in the sustainable development of cities. As in the second of the Sustainable Development Goals (SDGs), urban agriculture that “eliminates hunger, improves food and nutrition security and promotes sustainable agriculture” helps achieve this and creates a healthy and resilient environment. It

allows people to grow their own food at the individual and community level, strengthens social bonds and is a great activity for the elderly, women and children. In this way, the use of solid waste can not only improve the production of organic food, but also bring good changes in the urban environment, economy, and society. Covid19 encourages so many people to grow or grow their own food as needed. Growing food in empty / abandoned micro-level lots in housing planning would be ideal for community gardening. And for these purposes it is possible to use individual levels of lawn and roofs.

Pakistan is a developing country and has faced many problems such as urbanization, environmental problems, and lack of quality food. In 2020, about 37.2% of the total population of Pakistan lived in urban areas, and the growth rate of urbanization was about 2.53%. With population growth, sustainable development is almost impossible for Pakistan. To respond to food security and a healthy environment, urban agriculture is essential. There is a need to standardize urban agriculture so that people can grow their own food or do it commercially according to their skills and exposure.

The poor spend up to 85% of their income on food, as most urban farmers are poor, which is beneficial for the improvement of urban agrarian society. Urban agriculture is beneficial to both social inclusion and reducing gender inequality, with 65% of urban agriculture being women's. Urban agriculture provides ecological benefits by reducing waste in cities, improving biodiversity and air quality in cities, and reducing the overall environmental impact on transportation, transporting and storage of food. The production of agricultural products shows the main advantage of urban farming. Fruit and vegetable crops with high yields of up to 50 kg m<sup>2</sup> / year Urban horticulture is the most competitive area of urban agriculture due to the high cost of urban land and high water and fertilizer efficiency. Traditional urban gardening systems are divided into four categories: distributed and distributed gardens, simplified and expanded systems, mobile farming systems, and centralized systems. We also describe organic, an innovative system that allows for the simplification of above-ground farming.

## II. ADVANTAGES OF URBAN FARMING

Urban agriculture has many advantages, some of which are listed below:

- **Community development**

If a community participates in agricultural activities, it improves social cohesion and relationships between people.

- **Reduced distance for food**

If people grow their own food, they won't have to travel from place to place for food, food dependency in rural areas is also decreasing as people grow their own organic and healthy food.

- **Benefits for health and physical activity**

Farming is a healthy activity of free time and useful at the same time. People get to grow their food as well as relax their brains.

- **Community economic support**

If a community, does it on a large scale and sells it, they can increase their income and make more money. It can help a community earn money and grow healthy, organic food. Seniors and retirees can get involved in this activity.

- **Support for sustainable development**

For sustainable development, urban agriculture is essential. People are migrating from rural to urban areas and the burden on urban areas is increasing to provide jobs and food for all. It can help people grow their own food or use it as income as a community or as individuals.

- **Support for the poverty reduction strategy**

If we promote urban agriculture in poor areas and involve people in such activities, they can draw two and develop their own food.

- **Encourage self-sufficiency**

Urban farming does not take much time and advice, and people can do it easily. But once they learn how to do it, they can do it however they want. It gives them power; it can be a way to earn a living, or they can feed their families with it.

- **Encourage healthy eating**

These days, the foods available locally are neither healthy nor organic. Most of the items are not grown in an entirely fancy place, and the water used for them is not clean either. So if people learn to grow food, they can have clean food and healthy food.

## III. MATERIAL AND METHODS

To study the public potential of urban agriculture and the constraints of urban agriculture, the target community filled out a questionnaire. Concept mapping of the qualitative graphic procedure was used to test the potential of urban agriculture in the city of Johar. In addition, participants completed a questionnaire to collect socio-economic information.

We collected data in the city of Johar, Lahore. We chose this location because this area is ideal for a case study as it is home to a large and growing urban population. The town of Johar provides a context that presents many complexities and similar natural and social barriers (e.g. climatic challenges, lack of access to food, a rapidly growing, diverse and multicultural population), with great

variation in the educational and economic levels of residents. It is a growing city and is fast becoming Lahore's second central business district (CBD). This rapid population growth demonstrates a strong need for sustainable urban agricultural practices, given the benefits of food security, economic stability, and environmental conservation. Johar town has a climate where food can be grown year-round, with several growing seasons. The town of Johar has vacant land available for urban agriculture at the micro level. It can be done on the roofs of public and private buildings and in open spaces. Almost 50% of the land is available for urban agriculture.

Total population of Johar town in 105584 and its sample size was obtained by using solvin's formula.

Which is:

$$n = N / (1 + Ne^2)$$

Where:

n = Number of samples

N = Total population= 105584

e = Error tolerance = 0.05

therefore,

$$n = 105584 / (1 + 105584(0.05)^2)$$

$$n = 105584 / (1 + 26.395)$$

$$n = 398$$

hence, the sample size is 398.

## IV. RESULTS AND DISCUSSION

### A. Design of study and sample characteristics

In terms of data characteristics, most of the housing units consists of one household which is 46.2%, average household size is 5, average family structure is single families, most of the units are single which is 177 and 46%, then nucleus families are 43 and 11.2% and joint families are 163 42.3%. most of the families have two earning members which is 172 and 44.7%, 63 families have 3 earning members and 138 families have one earning members, head of 33.5% households are working in public sector, 47% are privately employed and 18.7% have their own small- or large-scale business, most of the households have monthly income around 60,000 which is 37.7%, 27% families have around 50,000, 23.4% households have 70,000 monthly incomes and 11.2% families have more than 70,000, monthly expenditure of 26.5% households are around 30,000, 31.9% have around 40,000, 28.6% have more than 20,000 and 10.9% have more than 50,000 monthly expenditures.

### B. Urban farming- results of interview of residents

From the interview of residents, it is revealed that 67.5% do know about urban farming practices and how it can be done and 31% doesn't know. 50.9% have the experience of urban farming/ kitchen gardening as they practice it at a small level at home and grow lemons and mints and parsley etc. at home. 62.9% take part in that kind of activities and 36% doesn't. 61.3% said that they have no issues of water availability and have quality water for this purpose and 36% face such issues. 21% use their home-grown items and from market as well to fulfill their needs and 53% get only from market. 62.6% households are willing to grow their own

food in their backyard, lawns, balconies, and rooftops If they are guided properly. 21.3% people spend more than 10,000 on vegetables and fruits, 33.2% spend between 7000-6000 on getting fruits and vegetables and 43.6% spend on food. 54% units do not have vacant area for gardening, 29% have free space and 17% says, the vacant area can be used for gardening. According to collected data there are not retired people in most of the households, in 44.9% families there are no retired people, 40.8% families have retired people and 13% retired people are willing to work in gardening activities. most people are not interested in community gardening because of lack of trust between the community, 36.6% households are interested in community gardening and 60.5% are not interested in it, 64.4% people said that covid-19 effected their availability of food and 33% said covid-19 did not affect availability of food for them, 36% people said they face technical issues, 26% said they face physical issues, 20% said they face economic issues and 18% face other issues in gardening.

### C. Urban farming- results of interview of practitioners

Practitioners interviewed in detail about urban agriculture/micro agriculture, asked about their experiences with urban farming and what is the best way to make it successful. Respondents aged between 30 and 60 are all active for 6 months to 4 years, some of whom are government officials. employees and some full-time housewives. They spend 30 to 2 hours each week, and none of the respondents say they do it for profit, only for entertainment purposes and to get healthy organic food.

Respondents grow spinach, coriander, fenugreek, carrots, lady fingers, tomatoes, chilies, broccoli, cabbage, pak choy, eggplant, mint, parsley, peas, lemon, onion, herbs, garlic, and green pepper for the winter season. And in the summer, they plant gourds, cucumbers, bitter gourds, eggplants, tomatoes, and coriander.

Respondents used organic matter (composted tea leaves, kitchen waste, and cow dung as fertilizer) and cost from 200 to 3000 per month and chemical fertilizer for farming and farming (NPK fertilizer) from 500 per month It costs 3000. Practitioners ask about seeds to use on their farm, nursery, follow resources like daraz.pk urban farming network, Pakistan, vegetable extract, etc.

Respondents each grow in different regions Some people put it on a balcony, rooftop, backyard, small pot or directly on the ground and do it at work. The average area available for farming is 5 square feet. 100 sq ft.

Respondents said micro-agricultural practices are superior to traditional farming methods because micro-agricultural techniques can be used to grow more than ten times more food in an area. It is a healthy activity at an affordable price and plays an important role in improving quality of life by creating a healthy environment. It can do well in a small space and easily achieve the desired results without harmful chemical side effects. They said that sharing up-to-date information with the public requires a high-profile campaign to share the latest information, learn the latest technology and encourage people to do it.

## V. CONCLUSION

This study shows that there are affordable efforts for beginners and that urban agriculture can be normalized if the government promotes conscious campaign. The public is interested in urban agriculture at the micro level because it offers the possibility of eating healthy and organic food and offers beautiful landscapes. in the community, especially those who have retired, can participate in such activities. People turn off participation in such activities because they need adequate supervision and knowledge for urban agriculture. And without knowing it, the consequences can be truly disastrous. People are active in food crops, but to do this they need workshops, community workshops and campaign. Due to covid19, people were hesitant to buy groceries at the market. This is another factor that people have encouraged micro-agriculture, a healthy activity which has many more benefits. Community gardens could also be the solution, but due to trust issues and a lack of social cohesion this is usually not the case here. Smallholder farmers face many challenges, including physical barriers, technical issues, and economic issues. According to research, horticultural laboratories and cognitive functions need campaign.

The innovative approach to small-scale agriculture includes the talent to increase the domestic use of healthy, safe, and affordable organic foods. Urban agriculture can improve living conditions and urban areas by providing natural beauty through plants. The family also believed that urban agriculture would help create a safe and healthy living environment and improve the aesthetic conditions of the city. The results reveal that urban agriculture has the potential to increase the power of food authorities to provide organic food to urban residents, as well as to promote a better understanding of the general nature of micro-agriculture. Take on new challenges and be resilient in a dynamic atmosphere. Urban agriculture ensures food security, better air quality, beautiful landscapes and improves the quality of life. However, research shows that government organizations create urban agriculture as part of the decision-making and decision-making process to promote urban agriculture in urban areas.

## VI. RECOMMENDATIONS

- All parties involved in agricultural trade must adopt such an innovative approach to solve the problem of organic food shortage at national level, especially in urban areas. Urban agriculture will be a good motivational tool for urban investors who can overcome the shortage of organic food in the city and use innovative technology to earn their own money. However, the government subsidizes these investors to develop policies on small scale agriculture / urban agriculture.
- The government should start thinking about design methods to improve the surrounding environment of urban style urban agriculture and urban aesthetics.
- Roof gardens in residential, commercial, and public buildings must be standardized. The sole purpose of this is not to make a green roof, but to produce healthy organic

food. The roof provides an atmosphere while providing food security that should be used to grow food.

- In the Pakistan Housing Plan, the government must provide rooftop gardens and community gardens to feed residents. And the condominium must have a vertical garden. Not only can it ensure food security for the masses, but it can also create jobs for many.
- The government must impose small-scale agriculture on the roofs of hospitals and factories, in yards and in open spaces. Helping them produce the food they need green roofs help create a healthy environment and beautiful landscapes.

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