Urban Farming: Here's why it is a good thing!

…"Let's start unlocking the potential of agriculture in cities"

Traditional farming methods require land, time, and manpower, it has been like this for as long as agriculture started, so new farming are regularly being developed. Nowadays, with urban farming, it is possible to achieve environmental, social and economic sustainability for buildings in urban cities[1]. The global Covid-19 lockdown is helping to revive interest in growing at home, but one in ten city households do not have access to a garden. Urban farming offers several options such as walls and rooftops, while creatively redeeming the urban environment. Urban farming can turn a growing number of consumers into producers. Changes in consumer behavior can contribute to environmental conservation and climate change mitigation. In addition, urban farming can produce higher quality vegetables or fruits, provide additional income for those who do it, and can expand social networks.

Social Impact

Findings prove that even on a small scale, urban farming can contribute to build social networks that provide practical and emotional support. In the context of urban farming, small backyard food gardens can connect some with neighbors, and this social network builds up at three levels: (a) creating friendships; (b) expanding the network of acquaintances with other urban farmers; and (c) increasing influential networks in government, civil society, and markets. Generally, urban farming participants come from heterogeneous groups. They are attracted personally or through their environment. Personal motivation for urban farming is usually related to the experience of nature, for example through the joy of gardening, pursuing a sustainable lifestyle, and protecting the environment. Indeed, social and ecological aspects are also found to be the main drivers of the establishment of several urban farming projects, as one of the studies showed participation in social democracy as a grassroots democracy was established by 127 projects to call for more use of green public spaces in urban areas[2].

Health Impact

The growth of urban farming can also help to change people's perspective on food products that have higher quality and are free from chemical pesticides. The main health impacts associated with urban farming include: (a) increased consumption of bio-foods; and (b) improvements in mental and physical health, e.g. mood and life satisfaction. Several studies have shown that for some urban farmers, growing their own food helps to diversify their family's diet and have greater access to fresh vegetables and fruit. In addition, going outside to nature helps reduce stress and their tendency to choose unhealthy foods. Epidemiological studies show that the elderly who do urban farming have better health indicator scores than those who do not[3].

Economic Impact

The importance of agriculture is that it allows production to be a source of income and a source of food supply. In fact, increasing urban farming development in the community can help to diversify household incomes and increase women's agency, e.g. women can develop urban farming as a side activity that will lead them in the short or longer term to be recognized as equal economic actors to men and achieve a fair division of household tasks so that they can have fully-fledged careers as equal members of society to men. As reported by the World Bank's Urban Development and Resilience Unit that conducted case studies on urban farming in four cities: Bangalore (India), Accra (Ghana), Nairobi (Kenya) and Lima (Peru), the results indicate that the impact of urban farming on these cities can provide jobs and incomes for urban farmers, as well as contributing to food security and nutrition[4].

Challenges & Barriers

Although urban farming has many benefits, there are several challenges and barriers. A literature review identified barriers that hinder urban farming: (1) limited access to land; (2) inadequate infrastructure and supporting services; (3) lack of skills and experience in urban farming[5]. Furthermore, several findings analyze that urban farming activities in several big cities have not been well documented. Three out of five urban farmers have difficulty authenticating information about permitted land uses for this farming method. For this reason, it is necessary to develop a policy review by taking into account the existing policies related to urban farming guidelines, sanitation systems, and water resources. In reality, there is a gap between policy and implementation where environmentally friendly policies already exist in several places but are challenged in their field implementation. In addition, the results of a study also show that there are still many urban planners who have not included urban farming in the urban development literature[5]. Generally, the role of urban planners is quite important for the advancement of urban farming because they can assist the government in determining the area of land use and a set of regulations governing agriculture under their authority.

In reality, most urban farmers do not own their own land. Most of them only use a small area for farming. Those who want to cultivate more land should be able to own their own land or rent someone else's land. Farmers who rent land must be prepared to face the risk of sudden increases in rent costs by landowners. Long term ownership or land leases need to be secured which is likely to encourage more land investment in the future. Some countries, such as France, have very protective regulations in land lease to farmers. In France, leasing your land to a farmer is quite protective as the amount of the rent is legally bound and the right to continue farming is guaranteed with certain limits. Owner's rights are limited by farmer's rights because agriculture is seen as a vital activity by the lawmaker. Vacant land is a tantalizing option for those looking for land for cultivation, but due to the high cost of land, this poses a challenge for urban farmers. As a result, some urban farmers are looking for ways to make land more economical and ergonomic that does not cost millions of dollars. In the future, farmers must be prepared if there are restrictions on land use. Some countries such as Bangkok[1] have land use and zoning regulations that severely limit land availability in urban environments, e.g. prohibition of building greenhouses in cities and restrictions on the height of plants grown.

Another challenge for urban farming is gaining access to water and dealing with water runoff as reported by 20% of urban farmers and 23% of urban planners in Chicago[5]. For many urban farmers, a water source is important for watering crops. Access to water means finding land equipped with pipes, rainwater, tanks, and water taps which is reportedly quite difficult in some places[4]. If the land area does not have good drainage, it means that other water sources are needed which will likely cost a lot of money. In most developing countries, the use of wastewater for agriculture, in both urban and rural areas, is a common practice especially in water-scarce areas. In some countries, standards for the use of wastewater for agriculture have been set, but in the field, there is still misunderstanding about the use of wastewater where untreated wastewater is still found. It should be noted that the use of untreated wastewater may pose a risk to human health as it may contain toxic chemicals, sewage-related pathogens, and other hazardous residues. Therefore, in the development of urban farming, it is recommended to use good water sources, e.g. waste water can be rich in nutrients and therefore must be treated differently for domestic or agricultural proposes. If the wastewater is managed properly, it can be safely used to support crop production through direct irrigation or by filling aquifers. However, to do this requires the development of good wastewater treatment indicators and guidelines.

Urban agricultural crops in general will be affected by changes in atmospheric conditions and microclimate in urban ecosystems. Urban cities face the challenges of microclimate change due to urban heat island (UHI). Reforestation activities such as urban farming turn out to be an effective adaptation tool to cool UHI, where increasing vegetation in cities can limit the temperature rises[6]. But in reality urban farming also has to face the impact of UHI. Urban atmospheric environments and microclimates are affected by a complex set of anthropogenic factors where UHI can contribute to higher day time temperatures, reduced night time cooling and higher levels of air pollution. This situation can affect the plant growth cycle in urban areas, so that it becomes one of the challenges for urban farming. Several findings suggest that the problem of UHI lies in the magnitude of the increase in recent decades due to global warming. Based on this, it is very necessary to develop technology and planting techniques that can be adapted to the microclimate of an area. Despite the challenges of studying plant growth in urban atmospheric environments, understanding these complex interactions will be essential for developing a science-based approach to urban farming. Traditional seed populations are now starting to adapt to certain agricultural conditions e.g. light and soil. This population has an inner diversity that ensures resistance to changing growing conditions. With lower yields in general, they can still produce crops under difficult conditions compared to industrial seeds which fail uniformly and produce no crop at all. For this reason, it must be kept in mind when suggesting specific cultivars.

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