

Sustainable food systems for the cities of the future: Potential of urban agriculture for small entrepreneurs in Canton Machala

Andreina González

Associate Professor I, Metropolitan University, Machala Headquarters; Ph.D. in Planning and Regional Development, University of Zulia

David Zaldumbide

Lecturer Metropolitan University, Machala Headquarters; Master of Economics, James Cook University

Javier Solano

Assistant Professor II, Metropolitan University, Machala Headquarters; Master in Economics and Business Administration, ESPOL

Autor para correspondencia: agonzalez@umet.edu.ec, dzaldumbide@umet.edu.ec, jsolano@umet.edu.ec

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Abstract: The role of urban agriculture in global food security is a subject of growing debate. There are several types of research on urban and peri-urban agriculture, especially in the major cities. These studies usually consist of an analysis of cases that often have different definitions of urban and peri-urban agriculture depending on the local setting and mostly about the objectives of the study. (Thebo, et al., 2014). This lack of steadiness makes it difficult to quantify the scope of this practice on a global scale and presents a challenge for citizens, authorities and academic institutions to provide adequate structure for the transition from theory to the application of urban agriculture within cities. On the one hand, the design of policies that seek the development of regions is framed between two aspects that shape today's world: the global, as a growing economic, cultural and political integration. On the other side the local, as that trend towards Higher levels of self-determination, management, decentralization and development in communities. (Fuchs, et al., 2003). As a result, it is becoming easier for people to get involved in local politics by posing problems that directly affect neighborhoods. Local regulations become much more relevant to the daily life of a person trying to grow their food and feel that they can contribute positively to their community. On the other hand, Climate change and environmental impacts represent a real and grave threat, but there are many potential solutions to them. The present paper aims to analyze the potential of urban agriculture within our environment.

Keywords: Urban Agriculture, Economic benefits, Social Benefits

Resumen: El papel de la agricultura urbana en la seguridad alimentaria global es un tema de creciente debate. Existen varios tipos de investigación sobre la agricultura urbana y periurbana, especialmente en las grandes ciudades. Estos estudios generalmente consisten en un análisis de casos que a menudo tienen diferentes definiciones de la agricultura urbana y periurbana dependiendo del entorno local y sobre todo de los objetivos del estudio. (Thebo, et al., 2014). Esta falta de estabilidad hace difícil cuantificar el alcance de esta práctica a escala mundial y presenta un reto para los ciudadanos, las autoridades y las instituciones académicas de proporcionar una estructura adecuada para la transición de la teoría a la aplicación de la agricultura urbana dentro de las ciudades. Por un lado, el diseño de políticas que buscan el desarrollo de las regiones se enmarca entre dos aspectos que configuran el mundo actual: el global, como una creciente integración económica, cultural y política. Por otro lado el local, como esa tendencia hacia niveles superiores de autodeterminación, gestión, descentralización y desarrollo en las comunidades. (Fuchs et al., 2003). Como resultado, cada vez es más fácil para la gente involucrarse en la política local planteando problemas que afectan directamente a los vecindarios. Las regulaciones locales se vuelven mucho más relevantes para la vida cotidiana de una persona que intenta hacer crecer su comida y sienten que pueden contribuir positivamente a su comunidad. Por otra parte, el cambio climático y los impactos ambientales representan una amenaza real y grave, pero hay muchas soluciones potenciales para ellos. El presente trabajo tiene como objetivo analizar el potencial de la agricultura urbana dentro de nuestro entorno.

Palabras Clave: Agricultura Urbana, beneficios económicos, beneficios sociales

Background

Urban agriculture has become an instrument that among several results, has allowed improving the food and nutrition for the inhabitants of the cities. On the other hand, it has helped to conserve the environment in several instances, by reducing the ecological footprint that impacts our daily lives today. Citizens also have an essential role to play when transforming unproductive spaces into sites that generate value and produce benefits for society. Here, it is common to include vulnerable sectors such as people with different capacities, the unemployed, women and Old people. What is sought is to create a society that tends to self-production and self-consumption, to mitigate the usual impacts while reducing costs by accessing family baskets, on the one hand, and generating revenue through the sale of everything Surplus (Thin 2015)

Economic benefits of urban agriculture

Attention to the emerging problems of urban poverty is a concern that requires priority treatment from the different levels of our societies, given the immediacy of the social demand generated by the precarious living conditions of the affected groups. (Moreno O. 2007). Community Progress, food security, and economic development are three of the most common pillars for considering participation in urban agriculture. Urban agriculture not only strengthens social ties. It also provides healthy livelihoods that might otherwise be lacking, but can also contribute to growth in household incomes, offset food costs and create jobs. Food safety is affected by the quantity and quality of food available for the household. (Nugent, 2002) On the other hand, improving the conditions of poor urban communities to produce, grow and sell vegetables and other agricultural products will also have positive effects on other poor urban residents through access to fresh food And nutritious at affordable prices. Since food is the primary component of household expenditure (low-income families spend between 50% and 60% of their income on staple foods and beverages), any savings in food spending imply that a significant portion of household income Will be available for other non-food expenses. (RUAF, 2003)

Social Benefits of Urban Agriculture

Bryden (1994) points out that the sustainability of rural communities depends on the ability to regenerate themselves in the long term in social, economic and physical terms. Similarly, other authors (Flora et al., 1994) consider that community sustainability is mostly based on the resilience they possess in response to changing environmental conditions. Several interpretations of the word community are emerging. The term has a connotation of a local social system, which provides a more fair way to give it a spatial context. For the changing nature of "rurality," the ways that are considered and analyzed local social systems are also changing (Bryden, 1994): On the other hand in the work of (Uzcátegui, et al., 2017).

The various benefits of urban agriculture are mentioned, as they are; The creation of safe places, pest reduction, in addition to fostering community development and building social capital. On the other hand, opportunities for youth education and development finally, intergenerational and intercultural integration.

Environmental Benefits of Urban Agriculture

Industrial agriculture is a major source of pollution from the extensive use of fossil fuels. Petrochemicals are used to fertilize, pulverize and conserve food. Plastics made from oil are used to package food, and gasoline is used to transport food around the world. Urban agriculture provides us with an alternative to the use of oil by minimizing the ecological footprint of transportation and using organic farming methods. Cities face many environmental challenges, including air and water quality problems, lack of sufficient green space, excess heat capture, runoff from contaminated rainwater, and lack of ecological biodiversity. Urban agriculture presents a unique opportunity to use empty or inactive land and roofs throughout cities for the production of healthy and pesticide-free food. Increasing green spaces to the community, including community gardens and urban farms, is acknowledged to provide some social, health, economic and environmental benefits.

Several studies have determined that the impact of environmental damage on our environment is increasing. The use of fertilizers, herbicides, and insecticides are negatively affecting the health and welfare of consumers. For the above, it is necessary to promote an agriculture according to the benefit of the human being and without harming the environment. Is here that the concept of urban and peri-urban agriculture is born, where the use of nutrients and micronutrients is encouraged through the Extensive use of organic manure "Building an organic matter base is essential for improving poor soils. It contains nutrients in more complex forms, which are released for plant use after the organic material decomposes (Cofie, et al. 2010).

Urban agriculture for the city of Machala

Possibility of food production within the Canton Machala

Understanding the ability of urban agriculture to feed urban populations necessarily depends on estimating the amount of food that can be grown in an urban area. In this stage is a critical assessment, insofar as the viability of urban agriculture and the degree of political and cultural support depend to some extent on whether it can have a significant impact on the availability and safety of food local. Ecuador has an antecedent with Quito since in 2000 a pilot program for the development of urban agriculture in the Panecillo Sector was carried out, A lot of public and international entities participated, the result was a success. On the one hand, the economies of the participants improved, just like their nutrition, there were processes of recycling of the organic wastes. Today the Metropolitan Agency for Economic Promotion (CONQUITO) is in charge of this initiative, whose primary objective is the consolidation of an entrepreneurial, sustainable and innovative city, generating jobs and equitably redistributing wealth (www.fao.org, 2015)

These efforts can be replicated in the towns like Machala, even more so when the land they own is suitable for crops because of the fertility of their soil; there are many spaces such as solar that are currently unproductive areas and have great potential to be transformed into orchards. That we have several benefits; The reduction of costs in operation generated by the transportation of organic waste, encourages recycling, income is produced by families, increases the nutritional quality of the population, among others.

Challenges and barriers to food production in the city of Machala

Given the neglect of agriculture in urban planning policy. Planners tend to think that growing public food is a messy business and they have little understanding of the need for towns

to grow food in cities. But for hundreds of millions of people in urban areas, it is a vital component of their livelihoods and during difficult times is a self-sustaining and important conservation strategy, city dwellers are increasingly trying to persuade planners. To receive a space for food crops, this is true not only in developing countries but also increasingly in developed cities where unemployment is endemic. (Deelstra et al., 2000).

A holistic perspective for policy making would take into account macro, sectoral and micro enterprises, and consider the following in development strategies:

- Incentives to households about food production and consumption
- The resources available to the local government in the provision of infrastructure and services;
- Trends in regional and national agricultural markets, especially supplies; Y
- Linkages between urban, peri-urban and rural farmers and processors

This brief description has been a review as suggested for additional research

- Environmental Monitoring of a Commercial Farm within the Canton Machala

Conclusions and recommendations

With the help of urban agriculture, up to 100 times more food can be produced than with conventional farming (per square meter). How is it possible? This is the direction - most urban farms are vertically designed, which allows you to grow products on as many levels as possible in a square meter. Agriculture strengthens local economies through job creation and access to healthy food. It enhances local ecologies by sequestering carbon. Additionally, creating green spaces that add shade and counteract the "heat island" effect of so much concrete. Finally, Urban farms also provide a much-needed respite for pollinators that are so vital to our food system.

Urban agriculture facilitates the organization of communities to obtain social cohesion. Economic benefits are analyzed in the same way. By working as a team, you can have greater control over activities. On the other hand, it generates the capacity of utilization of the surfaces to cultivate while the ecosystem is preserved by the friendly practices with the environment.

Cultivating together propitiates community development there is nothing like joining your neighbors during this summer's huge tomato harvest. Many cultures revolve around food cultivation, cooking and consumption. Food connects people, and growing food is one of the best ways to connect. Even individuals who do not get their hands dirty feel a greater sense of community thanks to urban farms.

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