

**XXII IAFE-NRI International Conference:
“The Common Agricultural Policy of the European
Union – the present and the future”**

**URBAN AGRICULTURE: A FRAMEWORK FOR
AGRICULTURAL POLICY – PRESENT AND
FUTURE**

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Abstract

Basic measures for the return food production closer to city:

- rapid urbanisation;
- the formulation of the “Smart Cities” concept; trends in sustainability and renewability;
- growing cities.

There has always been a very particular connection between food growing and technology.

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Food is produced and distributed globally. Contemporary consumers are more and more interested in the origin and production technology of the food they eat. The provision of organic food, locally produced food, food “picked that day” are only some of the trends that have been on the increase.

Vertical farming in open or enclosed spaces has, therefore, the potential to respond to the demographic challenges faced by Smart Cities.

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Rapid urbanization will make urban agriculture more significant. Peri-urban, or suburban agriculture, is a part of urban culture.

This paper is an attempt at describing the elements of a new agrarian politics that could help tackle the problems of resource allocation and, at the same time, provide citizens with a better quality of life.

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Introduction

Urban agriculture can be defined as an agricultural activity, as the cultivation of plants and the rearing of animals in and around cities. Cultivation has to be further defined as: the cultivation of plants and the rearing of animals for human nutrition, or for use as industrial raw material.

There are laws that strictly prescribe that farming activities be located outside the city boundaries and away from urban settings. The location of plant cultivation away from urban settings was somewhat less rigorously prescribed; the location was determined more by economic reasons and by the quality of available soil.

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	2007	2008	2018	2019	2050
Population	Urban: 3.3 (billion)	Urban: 50% (for the first time in human history)	Rural population reaches its maximum	Rapid increase in urban population. (A decrease in rural population to 2.8 billion)	Rapid increase in urban population. (A decrease in rural population to 2.8 billion).

Table 1. Projection of the urban: rural population ratio in the years leading up to 2050.

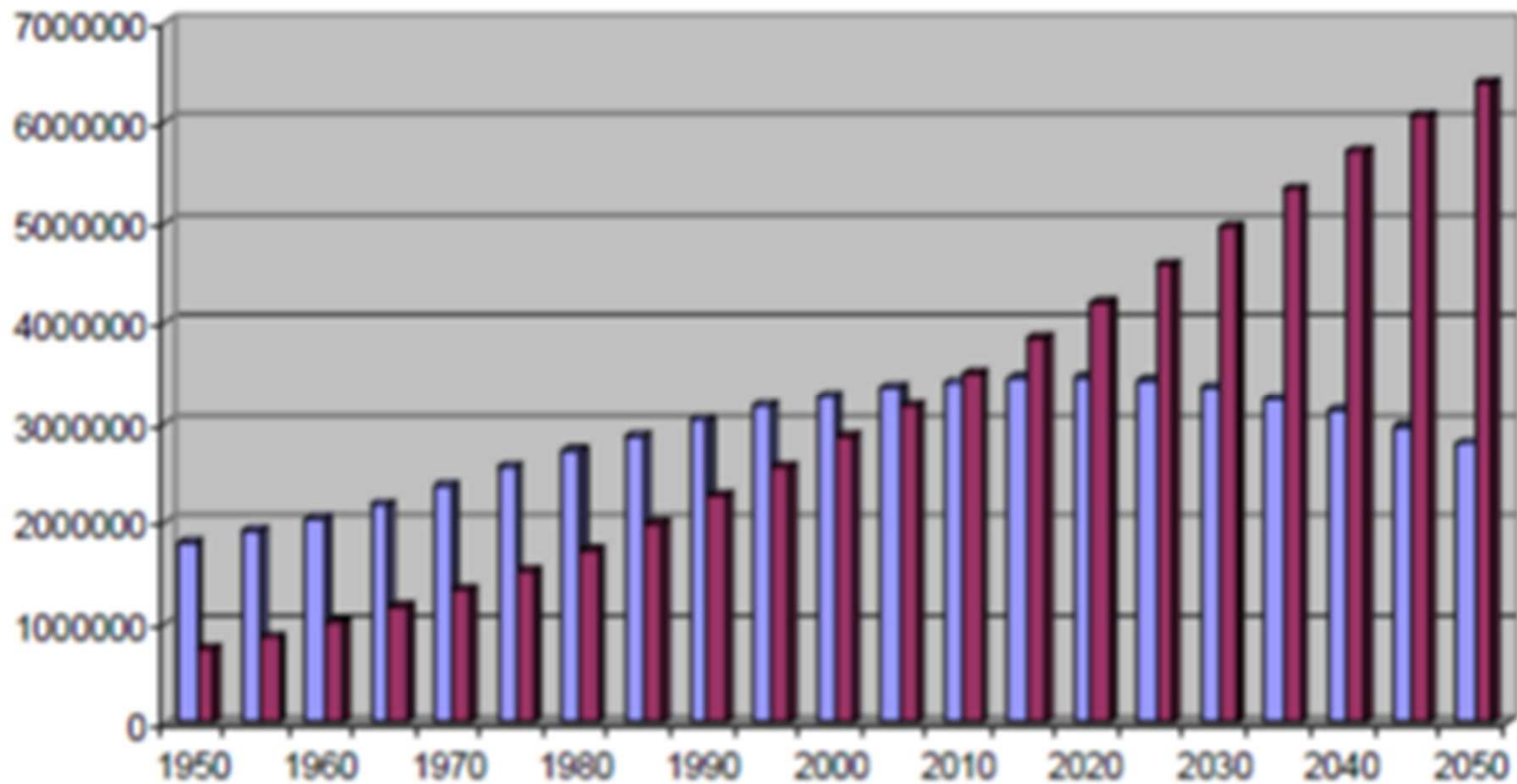


Figure 1. Projection of the world population divided into urban and rural population and expressed in thousands

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Advantages of urban agriculture

The development of agricultural capacity in and close to urban areas has the potential to decrease food transportation costs and related environmental impacts.

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Contemporary Food Supply Chain

The demands that are placed upon the contemporary food supply chain include the satisfaction of the social and health needs of the individual. The food in the contemporary food supply chain has to be produced in a sustainable way; it has to be healthy and safe for consumption.

Food production requires: greater yield; better distribution; and minimisation of waste. Many problems can be solved by innovative technology, but, in order to help build sustainable society, it is also necessary to develop individual responsibility.

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"Smart Cities"

In order to grasp more fully the scope of the challenge, it is necessary to refer specifically to particular numerical indicators:

- There were only three mega-cities until 1975: New York, Tokyo and Mexico City; while today (2017) there are 21 mega-cities.
- 60% of the World's GDP is made by the 600 biggest cities in the world.
- There will be a total of 29 mega-cities by 2025.

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"Smart Cities"

- In 2011, there were over 500 cities with over 1 million inhabitants.
- China alone will have 221 cities with over 1 million inhabitants by 2025.
- 60% of all energy consumed annually in the World is consumed by cities.
- Lighting alone consumes 19% of electricity produced in the whole World.

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"Smart Cities"

The term Digital City refers to:

- a connected community that combines broadband communications infrastructure;
- a flexible, service-oriented computing infrastructure based on open industry standards;
- innovative services to meet the needs of governments and their employees, citizens and businesses.

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"Smart Cities"

The problems that arises in growing urban areas are:

- better resource allocation in cities is primarily the better management of energy and drinkable water;
- better resource allocation and increased mobility;
- a more stable energy supply;
- better management of waste and infrastructure;
- better social component; innovation and quality education.

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The university is one of the key resources of smart city development. It should be a moving force of all strategies and innovations.

The quality of life itself leads to a competitive advantage. Populations demand better chances for personal, economic and social growth that smart cities can provide.

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"Smart Cities"

Creativity is seen as the main moving force and, together with knowledge, plays a key role.

Smart cities comprise a coherent system of social, cultural, technological and business systems whose synergy increases the quality of life of their citizens.

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"Smart Cities"

“Smart city is the city where investments in human and social capital and in traditional and modern infrastructure provide sustainable city development and high quality of life with wise use of natural resources and with smart use of the city potential (human, ecological, economic, management, absorption, and marketing) based on the participative management.” (Ishkineeva et al. 2015).

XXII IAFE-NRI International Conference Manifestations of Urban Agriculture

There are numerous examples in the world of urban agriculture being put into practice.

The vertical farming technology and local distribution methods decrease energy and time consumption, as well as transportation expenses to a large extent, creating one of the most sustainable models that guarantees fresh, healthy food in city centres at any time of the year.

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Gardens as Part of Urban Agriculture and Sustainability



Garden in the Schwabing part of Munich

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Gardens as Part of Urban Agriculture and Sustainability

The community and urban farm parcelling project is extremely flexible and can be adjusted to the needs of the local community. It stimulates community participation and the creation of a sustainable community.

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Gardens as Part of Urban Agriculture and Sustainability

There is an urban regeneration through:

- more open spaces built from materials such as water, soil, vegetation in urban areas;
- more formal and informal educational opportunities;
- more pedagogical information about agriculture and livestock breeding;
- garden, landscape architecture and animal rearing education;

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Gardens as Part of Urban Agriculture and Sustainability

There is an urban regeneration through:

- schools; excursions and educational, didactic and pedagogical activities;
- leisure time and sports activities;
- inclusion of people with learning disabilities and/or other special needs;
- development of company involvement in this type of urban agriculture, through coffee shops, horticultural markets, garden centres and other business communities.

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Gardens as Part of Urban Agriculture and Sustainability

The following elements justify the development of urban agriculture:

- economically vulnerable and unemployed population, urban poverty, uncertainty when it comes to food supply etc. Reasons for these are temporary crises: natural disasters, wars or disease outbreaks.
- relative advantage that an urban setting gives to farmers: direct access of their produce to the market places; accessibility of cheap inputs such as the food and water; waste disposal, proximity of the institutions that provide information on markets; credit possibilities, availability of technical advice.
- - possibility of quick adaptation of urban agriculture to: urban politics and programmes, conditions for the sustainable development of the city (water, air and soil cycle balance, local economic development and food supply, as well as waste recycling, promotion and maintenance of open city spaces, promoting recreational activities, social inclusion of minorities). (Veenhuizen, 2006)

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Gardens as Part of Urban Agriculture and Sustainability

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Challenges of Urban Agriculture

Modern agriculture encounters great difficulties that come with the growth of human population.

Urban agriculture can raise the level of efficient and effective resource allocation in the field of agriculture and raise the percentages of self-sustainability of city areas through locally produced food, but it cannot solve the problem of how to feed the world population.

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Challenges of Urban Agriculture

Urban agriculture is trying to provide answers to these challenges by applying new inventive food production methods. Vertical farming and aquaponics are being considered as the methods with the most prospects for success. Vertical farms have the better prospects, because they grow plants one on top of the other in multi-story closed spaces in order to achieve a required farming area.

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Conclusion

This paper is a short overview of the development and prospects of urban agriculture.

Urban agriculture returns to the spotlight of scientific interest at the beginning of the twenty-first century.

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Conclusion

The literature overview and the author's research demonstrate that urban agriculture:

- Has a strong socio-economic character, includes all social groups, and helps include many communities;
- Has a prominent educational character, reconnects people with nature and the entire food production chain;
- Helps the poorest population groups to improve their nutrition;

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Conclusion

- Redresses the balance between the urban and the rural;
- Decreases energy consumption required for food transportation;
- Shortens the from-farm-to-table time and the time required for food processing;
- Provides food that is organic, without pesticides and herbicides;
- Does not pollute water and arable land.

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Thank you for your attention!