

**Committee:** Environmental Commission

**Issue:** Growing green cities through urban agriculture

**Student Officer:** Katerina Bakella

**Position:** Deputy President

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## PERSONAL INTRODUCTION

Esteemed delegates,

My name is Katerina Bakella and I am an 11<sup>th</sup> grade student of the American College of Greece. In this year's American College of Greece Model United Nations, I will have the chance to serve as a Deputy President in the Environmental Commission and as an expert-chair on the topic of growing green cities through urban agriculture. The 3<sup>rd</sup> ACG MUN will be my first time chairing, and my seventh conference in total, thus I am beyond excited to share this experience with all of you.

This year's Environmental Commission topics are very interesting but at the same time demanding. Therefore, I hope this study guide provides you with the knowledge and information you need so as to create a draft resolution and participate in the debates of the committee. However, I believe it is crucial you also do your own research on your delegation's policy.

Please do not hesitate to contact me should you come up with any questions during your preparation at [a.bakella@acg.edu](mailto:a.bakella@acg.edu).

I am looking forward to meeting you all.

Kind regards,

Katerina Bakella

## TOPIC INTRODUCTION

Nowadays more than 2.5 billion people live in urban areas and by 2025 urban population is expected to reach 3.5 billion, while still, most food production will generate from rural areas.<sup>1</sup>

The high levels of urbanization in many countries are accompanied by poverty, unemployment and food insecurity. To survive, millions of slum dwellers (800 million approximately) are led to grow their own food on every piece of available land such as backyards, roads, railways, along rivers and under power lines. Urbanization is currently in an unsustainable path, therefore the main goal is to steer it towards sustainable, greener cities that offer their inhabitants choice, opportunity and hope. Although the concept of “green cities” suggests high-tech eco-architecture, bicycle greenways and zero-waste and is usually linked to urban planning in more developed countries, it can also be applied in low-income developing countries.<sup>2</sup>

Urban agriculture has the ability to reduce the rates of hunger and poverty and at the same time create greener cities, by integrating multiple functions in densely populated areas and offering an alternative land use.

Apart from food production, urban agriculture also offers a wide range of other functions such as: energy conservation, waste management, biodiversity, nutrient cycling, microclimate control, urban greening, economic revitalization, community socialization, human health, preservation of cultural heritage and education.<sup>3</sup>



*#1 Areas of work- The integrated food policy*

<sup>1</sup> Growing Green cities- FAO [www.fao.org/ag/agp/greencities/pdf/ggc-en.pdf](http://www.fao.org/ag/agp/greencities/pdf/ggc-en.pdf)

<sup>2</sup> Growing Green cities- FAO [www.fao.org/ag/agp/greencities/pdf/ggc-en.pdf](http://www.fao.org/ag/agp/greencities/pdf/ggc-en.pdf)

<sup>3</sup> Multifunctional Urban Agriculture for Sustainable Land Use Planning in the United States- August 2010

## DEFINITION OF KEY TERMS

### Green City

Green city is a city designed with consideration given to the impact on the environment, the effort to minimize the required inputs of energy, water and food, and the elimination of waste output of heat, air pollution (i.e., carbon dioxide), methane and water pollution.<sup>4</sup>

### Urban Agriculture

Urban Agriculture refers to agricultural practices in urban and peri-urban areas. It involves horticulture, animal husbandry, aquaculture and generally the growing, processing, and distribution of food and other products.

### Community Gardens

A community garden is a shared, semi-public space where people in the surrounding neighborhood share the work and harvest of maintaining a garden space for growing fruits, vegetables, flowers or even livestock. The way a community garden is set up and maintained can vary greatly from one to the next.

### Allotment

A legally fixed form of urban gardens tended individually by plot holders and their families who grow vegetables, fruit and flowers.

### Community Orchards

They are fruit trees planted in public space (such as public parks, schools and church yards). They are shared resources not managed for profit and are cared for by a community of people.

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<sup>4</sup> How green is a “Green City”? Institute for Advanced Sustainability Studies (IASS) Potsdam, December 2016

## BACKGROUND INFORMATION

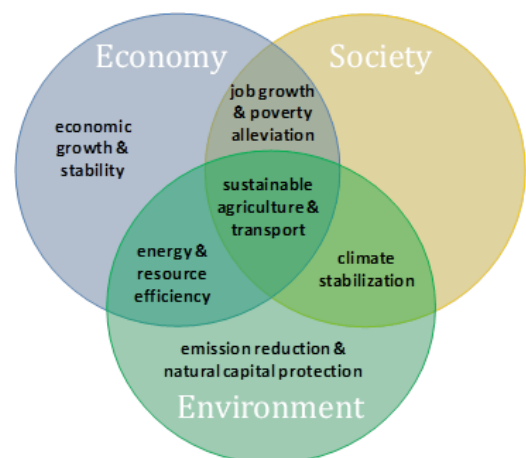
### How does urban agriculture help grow greener cities?

Urban agriculture is considered an alternative agriculture movement advocating major shifts toward a more ecologically sustainable agriculture. Through multidisciplinary projects (FAO- Food and Agriculture Organization of the United Nations -assisted projects for UPH- Urban and Peri-urban Horticulture- development have been funded by Belgium, Canada, Colombia, France, Italy, Norway, Spain and Venezuela) , governments and city administrations have managed to optimize policies, institutional frameworks and support services for UPH, and have set plans to improve agricultural production systems.

Urban Farming seems to be the green answer to the Rapid City growth and the key to empower the urban poor and drastically contribute to food security and nutrition. It suggests commercial market gardening on urban peripheries, simple hydroponic micro-gardens in slum areas, and green rooftops in densely populated city centers, which promote the creation of green cities. Urban Agriculture can also help grow greener cities that are better able to cope with social and environmental challenges and can provide opportunities to the marginalized ones.

Urban agriculture integrates three main principles of **sustainability**:

- Environmental health: Sustainable urban agriculture is supportive of environmental health in that it requires low input of water and low to no use of fertilizers and pesticides.
- Economic profitability: Sustainable urban agriculture reduces transportation costs of shipping between local producers to local markets.
- Social wellness: Sustainable urban agriculture provides opportunities for social interaction and individual



#2 The three main principles of sustainability

recreational opportunities.

### **1. Environmental Advantages of Urban Agriculture**

The environmental impact of cities has increased due to rapid urbanization, with growing threats to biodiversity, natural resource availability, and healthy living. Urban agriculture has been linked to various environmental advantages, including improvements in local biodiversity, decreases in overall pollution, and increases in the recycling of organic and water resources. Furthermore, UNEP and FAO have found that urban agriculture is aiding cities in decreasing pollution that comes from the transportation of food. It reduces the environmental impacts through less transport, packaging and storage thus generating fuel savings, fewer carbon dioxide emissions and less air pollution. It also lowers city temperatures and, when practiced on greenbelts, improves landscapes and citizens' quality of life.

Urban planting helps clean up the air and water, build resilience of aquatic environment, reduce heat and noise in urban areas and recycle urban waste and use it as nutrients for the plants. As it concerns biodiversity, it protects and improves it by increasing ecosystem resilience. Finally, it plays an important role in the issue of climate change since it reduces global heat and improves microclimate and helps with carbon sequestration.

For instance, in Peru, where urbanization is intense, agriculture has helped to "green" many areas and especially Lima (capital of Peru). Urban agriculture is a promising alternative that can make an important contribution to stabilize environmentally fragile land, such as hillsides and river banks, and protect them from being used for unsafe residential development.

### **2. Economic Profitability**

Urban agriculture can benefit financially the city and the citizens. After new programs related to it are initiated there will be new employment and training opportunities for the workers of the city. (One of the most disadvantaged and marginalized groups). Creating avenues increases business and expands the urban economy. At the same time, there are on-farm benefits, as the yields and the returns from the land will be higher and the transportation miles will be reduced. Growing

fruits and vegetables can help low-income people supplement their grocery shopping, while growers can earn supplemental income by selling excess at community events and farmers markets.

### 3. Social wellness -Health -Food and Nutrition Security

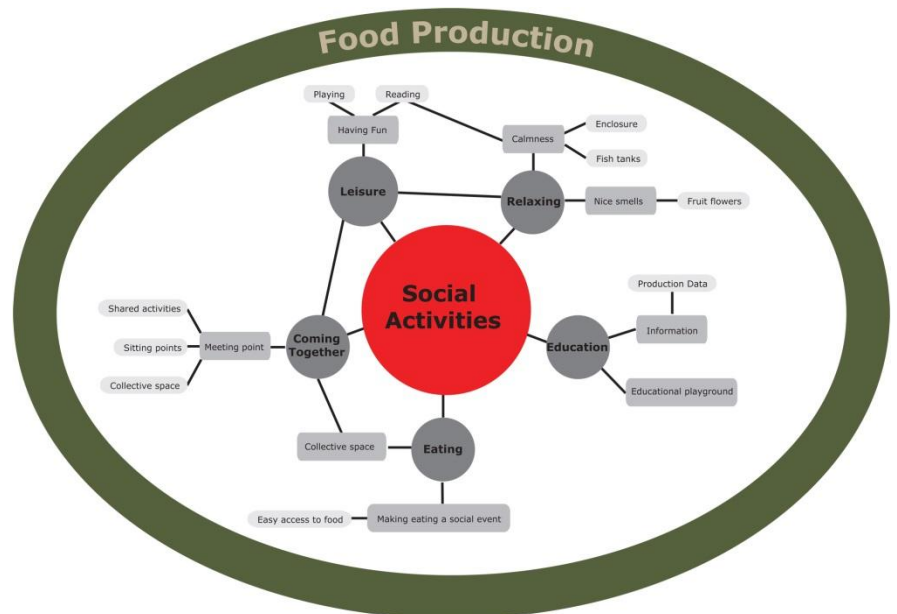
Urban agriculture improves access to fresh, nutritious food, helps combat childhood obesity, diabetes, and poor nutrition prevalent in many urban communities.

Therefore, growing fruit and vegetables in and around cities increases and boosts the physical supply of fresh, nutritious produce available

and improves the urban poor's access to food. Apart

from that, school gardens are a proven means of promoting child nutrition, since children can familiarize with agriculture, get fresh fruit and vegetables for healthy school meals and improve their nutrition overall. Dealing with urban agriculture also promotes community engagement and development and helps build a social capital.

All in all, urban agriculture provides fresh food, generates employment, recycles urban wastes, creates greenbelts, and strengthens cities' resilience to climate change.



#3 Flowchart- How urban agriculture and food production promote social wellness through certain activities

### Types of Sustainable Urban Agricultural Systems

- **Green rooftop gardens**

A green roof system resembles a carpeting of plants on a roof which involves, at a minimum, high quality water-

proofing, root repellent system, drainage system, filter



#4 Green rooftop garden

cloth, a lightweight growing medium, and plants.<sup>5</sup> It improves the energy performance of buildings and reduces storm water runoff.<sup>6</sup> Growing sustainable urban agriculture produce on structurally suitable and accessible rooftops is undoubtedly one of the most important parts of the issue.

- **Commercial or Communal Greenhouses**

Commercial or Communal Greenhouses refer to greenhouse production of sustainable agricultural products on a small communal to large commercial scale. These structures can be homemade with recycled materials for communal use, or large scale using prefab construction methods for commercial use.



*#5 The greenhouse is often open to the public*

- **Community Gardens & Community Orchards**



*#6 Community garden*

A community orchard is a group of fruit trees planted in public spaces (public parks, school and church yards, abandoned lots) and cared for by volunteers and community people who maintain and harvest the trees. They can increase access to healthy fruit and educate

young people. Apart from that, they are places of connection where volunteers often

share the harvest with the local community and agencies such as the food bank.<sup>7</sup>

- **Patio Pots**



*#7 Patio pots*

<sup>5</sup> <https://greenroofs.org/about-green-roofs/>

<sup>6</sup> How to Start a Green Roof Garden by NINA CALLAWAY [www.thekitchn.com/how-to-make-a-green-rooftop-ga-51257](http://www.thekitchn.com/how-to-make-a-green-rooftop-ga-51257)

<sup>7</sup> <http://communityorchard.ca/orchards-101-2/>

Patio Pots refer to growing vegetable and fruits in small pots in limited spaces such as patios, for recreation and private consumption.

- **Free-standing Frame Structure**

Free-standing Frame Structure refers to vertical structures at a range of scales, including some that are constructed out of repurposed materials including PVC pipes, empty barrows, fence posts, and scrap metal frames welded together.



#8 Free-standing Frame Structure

## MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

### Cuba

Cuba is considered to be one of the urban agricultural pioneers, due to a fundamental reorganization of food production after the collapse of the Soviet Union in 1991. Today, Cuba's capital Havana, which has a population of just over 2 million, has about 200 city farms that grow lettuce, tomatoes, peppers, sweet potatoes, spinach, herbs and other crops that are sold cheaply in local markets.<sup>8</sup>

### China

China leads the world indoor farming and invests amounts of effort in urban agriculture. With a population of 1.3 billion and a high demand for food, it has integrated urban agriculture into its strategic development plans. Recognizing the importance of urban agriculture to sustainable urban development in the late 1990s, Beijing's municipal government launched an official program which encourages multi-function urban agriculture in peri-urban areas through the development of "agro-parks".<sup>9</sup>

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<sup>8</sup> Urban farms herald green city 'revolution' By Thair Shaikh, CNN

<sup>9</sup> "Urban agriculture makes China's cities more liveable" Cai Jianming 26.06.2014



### **United States of America (USA)**

Urban agriculture and especially community gardens have been part of American cities since the late 19<sup>th</sup> century. An example is the city of Chicago, which was in 2016, the leader of urban agriculture in the United States with 250,000 home gardens and 1,500 large community gardens.<sup>10</sup>

### **European Union (EU)**

The EU believes that investment in urban areas and agriculture is necessary, so as to reduce poverty and hunger, face urbanization and promote inclusive growth. One of the previous attempts the EU has made is the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) in 2012.

### **Food and Agriculture Organization of the United Nations (FAO)**

The Food and Agriculture Organization of the United Nations (FAO), founded in 1945, is a specialized agency of the UN that coordinates the efforts towards the eradication of hunger and food insecurity.<sup>11</sup> It has released its report on Food and Agriculture “Driving action across the 2030 Agenda for Sustainable Development”, which outlines its newest initiatives aimed at fulfilling the SDGs (Sustainable Development Goals) and calls for a “greener revolution” within the agricultural sector.

### **World Food Programme (WFP)**

WFP is an international committee which also has as a goal to defeat hunger, ensure food security and improved nutrition by 2030. It assists 91.4 million people in around 83 countries each year and has an important role in saving and changing lives.<sup>12</sup>

### **International Institute of Agriculture (IIA)**

The International Institute of Agriculture (IIA), which was founded in 1905 in Rome, has as a main priority to ensure food security, enhance nutritional value of products,

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<sup>10</sup> How Chicago Became a Leader in Urban Agriculture By Emily Scott - July 28, 2016

<sup>11</sup> Food and Agriculture Organization of the United States-About

<sup>12</sup> World Food Programme-Overview

and improve crops and generally the livelihoods of smallholder farmers and their families.<sup>13</sup>

### TIMELINE OF EVENTS

Date	Description of event
1945	The constitution of Food and Agricultural Organization of the United Nations is signed at the First Session of the organization
1961	Establishment of the World Food Program (WFP)
1974	Universal Declaration on the Eradication of Hunger and Malnutrition
1999	Committee on Agriculture (COAG)- recognizes urban agriculture as means to poverty reduction
2008	FAO reiterated the call to use urban agriculture through the release of a report titled Urban Agriculture: For Sustainable Poverty Alleviation and Food Security
2015	The international community adopts the 2030 Agenda for Sustainable Development
2017	FAO releases its report on Food and Agriculture: Driving action across the 2030 Agenda for Sustainable Development, which outlines its newest initiatives aimed at fulfilling the SDGs and calls for a “greener revolution” within the agricultural sector

### RELEVANT RESOLUTIONS, TREATIES AND EVENTS

The General Assembly annually adopts resolutions in support of agriculture development and food security, which promote sustainable agriculture in rural and urban settings.

<sup>13</sup> International Institute of Agriculture From Wikipedia, the free encyclopedia

**General Assembly- Resolution 71/235 on the “Implementation of the outcome of the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) and strengthening of the United Nations Human Settlements Programme (UN-Habitat)” - December 2016<sup>14</sup>**

In 2016, the UN Human Settlements Programme (UN-Habitat) led the effort in adopting a multilateral vision for urban development titled The New Urban Agenda, during the UN Conference on Housing and Sustainable Urban Development (Habitat III). The topics covered by Habitat III were: civic engagement, financing urban development, metropolitan areas, public spaces, sustainable energy and cities, and informal settlements. The overall goals of Habitat III are to take sizable action against environmental degradation while promoting the livelihoods and well-being of those living in deteriorating urban situations.<sup>15</sup>

**General Assembly- Resolution 70/198 on “Agricultural technology for sustainable development”-2015**

This resolution called for the integration of technologies that can mitigate the effects of climate change, resource depletion, and urbanization.<sup>16</sup>

**General Assembly- Resolution 71/245 on “Agriculture development, food security, and nutrition”-2017**

It is the most recent resolution adopted, which calls specifically for greater investment in urban mechanisms for food production, transportation, and storage, to help provide more nutritious food to urban populations.<sup>17</sup>

**PREVIOUS ATTEMPTS TO SOLVE THE ISSUE**

**European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI) in 2012**

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<sup>14</sup> UN General Assembly, Implementation of the outcome of the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) and strengthening of the United Nations Human Settlements Programme (UN-Habitat)(A/RES/71/235), 2016.

<sup>15</sup> UN General Assembly, The New Urban Agenda (A/RES/71/256), 2016.

<sup>16</sup> UN General Assembly, Agricultural technology for sustainable development (A/RES/70/198), 2015

<sup>17</sup> UN General Assembly, Agriculture development, food security and nutrition (A/RES/71/245), 2017.

EIP-AGRI is the EU's approach to promoting innovation within the agricultural industry. It plans public meetings and supports web-based functions, such as research proposals, webinars, and online industry meetings, as outlets for urban and rural farmers to share ideas and successes.<sup>18</sup>

### **FAO partnership with the Addis Ababa Urban Agriculture Core Process (AAUACP)- February 2012**

They tried to hold the Urban Agriculture Stakeholders' Network Creation Workshop, which included 60 stakeholders from Ethiopia as well as the international agriculture community.<sup>19</sup>

### **Research Centre for Urban Agriculture and Forestry (RUAf) and Western Africa Bio-wastes for Energy and Fertilizer (WABEF) program**

In 2014, through RUAf, the EU, and industry stakeholder funding, universities in Senegal, Mali, and Benin initiated the Western Africa Bio-wastes for Energy and Fertilizer (WABEF) program. WABEF is a three-year program which is expected to reduce the amount of agricultural, industrial and municipal bio-waste and turn the waste into fertilizer and biogas for urban agriculture projects.<sup>20</sup>

### **International Network for Urban Agriculture (INUAg)**

It promoted urban agriculture enterprises and projects through annual awards given to programs in all regions of the world. The 2016 winners of the INUAg awards were programs based out of Mongolia, Poland, and Trinidad and Tobago. All winners promoted biodiversity within their cities, provide fresh products at local markets, and empower marginalized communities through urban agriculture.<sup>21</sup>

### **The City Farm operated by the Sustainable Agriculture Foundation**

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<sup>18</sup> European Commission, About European Innovation Partnership, 2017

<sup>19</sup> Addis Ababa Urban Agriculture Core Process, Urban Agriculture Stakeholders' Network Creation Workshop: Workshop Proceedings Addis Ababa Urban Agriculture Core Process, 2012.

<sup>20</sup> RUAf, About RUAf, 2017

<sup>21</sup> INUAg, INUAG, 2017

It provided spaces for small-scale producers to farm and gained technical knowledge to increase their yield.<sup>22</sup>

### **POSSIBLE SOLUTIONS**

Following the above mentioned analysis, it is evident that urban agriculture has the ability to help in growing green cities in the future. Therefore, it is necessary that action is taken immediately and ways for solving the issue are proposed.

What is highly important is the official recognition of urban agriculture's positive role in urban development, particularly in the nutrition and livelihoods of the urban poor, so that political and institutional commitments are ensured and sustainable management is achieved. Then support is needed for securing land and water for agriculture since there are certain legal measures needed to secure land and space for urban agriculture, especially market gardening.

It is necessary that the people involved in the production are introduced to Integrated Production and Protection Management (which reduces the use of toxic chemicals to control pests and diseases), as well as to improved cultivars and cropping practices adapted to local conditions. By training the people involved in fostering good agricultural practices, sustainable production systems that are environmentally friendly can be built and the safety and quality of products can be ensured.

Moreover, raising awareness is crucial since people need to understand and recognize the importance of urban agriculture, after getting fully informed about it. It is highly important that they all get involved in it through their family, school and community gardens, so that they can grow their own fruit and vegetables and improve their nutrition. They can also be taught farming and gardening skills through specialized programs designed for citizens.

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<sup>22</sup> Tanworamongkon & Middleton, Inspiring the urban farming movement in Bangkok, Mekong Commons, 2014.

Delegates should also try and find ways to ensure participation by all stakeholders in the UPH (Urban and Peri-urban Horticulture) sector and last but not least promote and address certain urban planning concerns.

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