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### Urban Agriculture and the journey towards UrbanFarm Challenge

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Agriculture has always been the primary sustaining source for human living. Since the very beginning of civilization, the Homo Sapiens had to struggle with the natural environment to procure food and finally ceased to be a nomad species when they discovered how to cultivate the land. Agriculture stands at the very beginning of the urban environment and has conditioned where and how cities were built for thousands of years.

As the population grew, together with the human ability to submit the land to its will through scientific progress, agriculture practices changed and were able to feed an increasing number of people. Not long after the Second World War, a huge amount of chemicals, like nitrate, were converted into cheap fertilizer leading the way for the first Green Revolution which dramatically increased the production of food, opening up a new industrial era of agriculture.

In recent years, we have gone from questioning our capacity to produce enough food to

questioning the way we produce it: our food system's ecological footprint is not sustainable, and it is endangering the biodiversity of local ecosystems. More than 75 billion tons of fertile soil are lost every year due to desertification, soil erosion, and soil degradation. We reached a paradox where the way we produce food now is an actual threat to our ability to produce food at all in the next future.

The way we produce food is not the only threat that our food system has and will have to face. Global crisis factors such as rapid climate change (where industrialized agriculture is one of the main contributors), the increasing population and urbanization trends, together with the progressive abandonment of rural areas in the developing regions of the world, forced us to rethink our global food strategies and pushed the international scientific community to find alternatives and complementary solutions to reach food security goals in an already overcrowded world.

In this scenario, it is not difficult to understand why in the past 20 years there has been a growing interest towards urban agriculture and even though the concept is not new, recently, a broad range of research has been published on this topic. The growing demand for food in massive urban areas makes nutrition one of the greatest issues to be addressed. In this regard, city authorities, planners, economists, environmentalists as well as individual citizens are becoming increasingly involved in this subject area. Indeed, besides its capacity to produce and distribute food in urban areas, it is possible to explain urban agriculture's growing interest as it is considered to be a source of significant environmental, social, and health-related benefits as well as economic development opportunities. Each of these has been well documented in the research literature. Nonetheless, the application of urban agriculture projects within cities' boundaries faces several challenges such as a diffuse skepticism from the local population, barriers to cooperation with more traditional farmers, lack of investments, or difficulties in making or maintaining profits.

Thus, it is crucial that all the actors involved in the development of urban agriculture projects, from planners to agronomists, from architects to engineers, work together to overcome these challenges. For this reason, during the past five years, the UrbanFarm Student Challenge aimed at reducing the knowledge gap between future practitioners and promoters of urban farming initiatives. To this end, the challenge has fostered collaboration between students from highly diverse backgrounds, from agriculture to architecture, passing through social sciences and humanities. Moreover, the teams have always been characterized by the union of students originating from different countries and universities, further enriching through their own experiences and knowledge the expertise of the teams. This journey aims at generating awareness concerning the social, economic, and environmental issues connected to farming the city, forcing students to face a series of challenges that can be easily translated into real-life applications.



UrbanFarm Student Challenge 2020, archive picture. The grand finale at NovelFarm in Pordenone