

# Environmental Benefits and Burdens of Urban Agriculture Relative to Conventional Agriculture

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## INTRODUCTION

Urbanization is a growing reality on a global basis. According to WHO 70% of the world's population will be living in urban areas by 2050 [WHO, 2014]. Furthermore the world population is growing and the increasing number of mouths to feed requires land capacity for food production. The production of food in a sustainable way already presents great problems and the challenges will only increase in the future when both the changing climate, the growing population and urbanization should be taken into account [Kulak et al., 2012]. The current (urban) food system represents a linear model. The resources go in, are consumed and go out of the city without recycling, drawing a line from farm to waste disposal. By moving agriculture into the cities a circular food distribution system is created, where the food is produced and consumed in the same place and where waste is recycled and utilized in the process. Urban agriculture is assumed to be a promising way of ensuring food supply in the future, but until now the implications of urban agriculture concerning the environment and human health have only been cursory studied.

## PROJECT

The goal of this project is to generate a comparison of urban agriculture and conventional (rural) agriculture by evaluating the similarities and differences.

The different types of urban agriculture systems are divided into four archetypes covering all from rooftop greenhouses to allotment gardens. These archetypes are then compared to similar types (i.e. producing the same or similar crops) of conventional agriculture.

The project is divided into two phases. The first phase and the primary objective of the project is to compare the inputs (pesticides, fertilizer etc.) and outputs (grey water, yield etc.) to/from the agricultural systems. The impacts of the different inputs and outputs on the surrounding environment are then estimated yielding a rough picture of what happens when e.g. waste streams and emissions are moved from rural areas into an urban environment. The second phase is an evaluation of the potential effects on human health posed by crops produced in an urban environment. Phase two will be undertaken by evaluating crop uptake of selected pollutants in soil and air (through a literary study) combining it with knowledge about the human diet. This will give an estimate of the potential human health challenges posed by farming in polluted urban areas. Lastly the two phases are compared allowing a multi-angle discussion of the pros and cons of urban farming.

As the project will be handed in on the 11<sup>th</sup> of July 2014 results cannot yet be presented.

## REFERENCES

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- [Kulak et al., 2012] Kulak, M., Graves, A., and Chatterton, J. (2012). Reducing greenhouse gas emissions with urban agriculture: A Life Cycle Assessment perspective. *Landscape and Urban Planning*, 111:68–78.