

THE BENEFITS OF HIGH RISE URBAN FARMS

Four billion people — almost two thirds of the world's population — experience severe water scarcity for at least one month each year. Water scarcity

Over two billion people live in countries where water supply is inadequate.

Half of the world's population could be living in areas facing water scarcity by as early as 2025.

Some 700 million people could be displaced by intense water scarcity by 2030. By 2040, roughly 1 in 4 children worldwide will be living in areas of extremely high water stress (1)

The above statistics are from the report on water scarcity by the UNICEF

Water shortage are going to and are a problem in food production and supporting residential and commercial parts of communities. At the moment 70% of the world's water is used for agriculture leaving not much for the other demands needed by communities. (2)

The water uses are in many cases in competition with each other. Most of the water used in farming is not available for use for residences. One partial solution for water shortages is to move the competition of water uses into a package of coordinated use. This is where High Rise Urban Farms can be of great benefit. The structures are designed to be built next to urban centers. There is one that is a 10 story building on a 4 acre foot print that can feed 50,000 people. (3) The benefits for building next to urban centers are many. By building next to the urban centers you are close to the market and you will not lose much produce in spoilage due to transportation and you can reuse the water that is necessary for residential and commercial use. In many cases this reuse might require tertiary treatment of the water.

SOME ADDITIONAL BENEFITS OF HIGH RISE URBAN FARMS`

- Produces crops year-round; 1 indoor acre is equivalent to 4-6 outdoor acres or more, depending upon the crop (e.g., strawberries: 1 indoor acre = 30 outdoor acres)
- Avoids weather-related crop failures due to droughts, floods, pests
- Grown organically: no herbicides, pesticides, or fertilizers
- Virtually eliminates agricultural runoff by recycling black water
- Returns farmland to nature, restoring ecosystem functions and services
- Greatly reduces the incidence of many infectious diseases that are acquired at the agricultural interface
- Converts black and gray water into potable water by collecting the water of evapotranspiration
- Adds energy back to the grid via methane generation from composting non-edible parts of plants and animals
- Dramatically reduces fossil fuel use (no tractors, plows, shipping.)
- Converts abandoned urban properties into food production centers • Creates sustainable environments for urban centers
- Creates new employment opportunities
- May prove to be useful for integrating into refugee camps • Offers the promise of measurable economic improvement for tropical and subtropical Least Developing Countries (LDC). If this should prove to be the case, then vertical farms may be a catalyst in helping to reduce or even reverse the population growth of LDCs as they adopt urban agriculture as a strategy for sustainable food production.

Could reduce the incidence of armed conflict over natural resources, such as water and land for agriculture (4)

There are people developing the ways to grow alfalfa and cotton and even wheat in High Rise or Vertical farming.⁽⁵⁾ There is a concern in Kenya in the reduction of coffee production in the plantations. The Environmental Concern Collective would like to coordinate an effort to see if coffee or tea could be grown commercially inside a High Rise or Vertical Farm. This effort could require researchers in agronomy and physical design of the structures.

The Environmental Concern Collective would coordinate efforts to build a unit outside of Nairobi. This unit would be a test case in the feasibility of the concept. The unit would be used as a platform to experiment in how to grow commercial levels of various crops. Here we could experiment on different types of mediums for growing the crops. It would also be a place to help develop ways to employ the people from traditional farming areas who will have to leave the farms because of water shortages. The High Rise structures could become coops employing the farmers who have to relocate. The Collective is convinced that High Rise and Vertical farming or going to be a principal part of the solution for providing food security in the regions with water shortages.

1-<https://www.unicef.org/wash/water-scarcity>

2-5 facts you should know about water use in agriculture (<https://www.Cargil.com/story/agriculture-water-use#>)

3-Cooper, Arnie (14 June 2017). "Going Up? Vertical Farming in High-Rises Raises Hopes" (<https://psmag.com/environment/farming-in-high-rises-raises-hopes-3705>).

4-The high rise urban farms of the future (Globe-Net.com november 24, 2009)

5-copies of the pdfs about these developments