

1. Urban agriculture is not a new phenomenon but it needs to be modernized to accommodate the extreme growing pressure of urbanization. Technology, resource efficiency, foot print ratio and integration into existing infrastructure is essential. This should be mass-production to feed people, not high-end value products for the rich. We must focus on producing crops of highest nutritional value, not benchmark towards tonnage.
2. Patented and proven technology for large-scale, industrial vertical urban food production exists. It can be deployed and integrated within existing city infrastructure. Challenges are business models, distribution methods, meeting requirements for aesthetic city value and a conservative real estate industry. **[Knowledge gap: Is there a need for a national perspective on urban agriculture, to take this seriously? Should subsidies be considered? Should authorities regulate this industry, using licensing to food technology providers and operators - to be compared with other infrastructure builders, e.g. network providers and telecommunication operators. Should operators also be governed in a more inclusive way than a normal share holding corporation, to avoid patented technology to be used more to maximize profit than food production for all?]** **[Divergence of opinion: Does closed environment agriculture contribute to biodiversity?]** **[Fact: There is patented technology to vertically grow over 50 metric tonnes high nutritional food per m2 ground foot print, using 1% of water compared to free land farming.]**
3. Market research in Asia, North America, Europe, Middle East and certain regional critical urban centers has proven that there is substantial demand for city-grown food with consumers and city authorities. **[Fact: 67 % of researched consumers preferred locally grown vegetables compared to organic import. They also agreed to pay up to 30% higher price.]** Even standardization for Smart Cities (ISO 37120) today includes indicators for urban food production. This in itself creates a potential market, as cities compete to raise their attractiveness through following these standards. **[Fact: Singapore is increasing its capacity for local produce 30% of its nutritional needs by 2030, by going vertical.]**
4. Food is the unifying element across all SDGs.
5. Highly nutritional products are possible to grow soil-less and with LED, or with combined light from the Sun, or using other substrates than soil, in closed environment systems. **[Fact: Research show that LED-lighting significantly increased the nutritional quality such as dietary minerals (Ca, Fe, Mg & K), total reduced N, carotenoids, anthocyanin, soluble protein, ascorbic acid and phenolic compounds of leafy vegetable and herbs when compared to that grown only under natural sunlight.]**

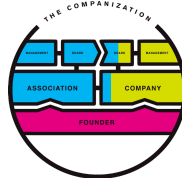
6. The need to protect agricultural land and for recreational purposes creates a need for urban city planners to integrate large-scale food production especially in megacities. [**Fact:** *Columbia University has shown that we need more arable land, of the size of Brazil, to feed the global population using traditional farming techniques. Some estimates are that 15% of the global nutritional needs will have to be produced in urban areas*]
7. Changing consumer behavior into a more sustainable behavior is a challenge as research basically claims that we as consumers don't care as much as we would like to believe.
8. Interest is high amongst the financial market, philanthropists, and even the real estate players to be part of this Food Systems industry. [**Fact:** *There is an approximately USD 50 billion market opportunity for vertical farms over the next several years. Bloomberg estimates that the vertical farming industry global market could be worth USD 17 billion in less than five years. A 2019 Global Impact Investing Network study indicates that 50% of investors plan to increase their allocation to food and agriculture.*]
9. We need to develop a participation mechanism to bring together policy makers and investors to collectively tackle the issue of food security, and to develop new scalable social finance tools, such as Green Bonds, to expand the opportunities. [**Knowledge gap:** *How can this be organized and who should take the lead?*]

Conclusion:

The modern city needs to make food production a natural part of its system. The solution to this problem might be new cultivation techniques. Urban agriculture can help us not only to consume less of the Earth's resources, but also get new generations involved in professions that is crucial to a sustainable future. Living standards, healthcare, sustainability and waste and water management are all issues that concern the population. And these all demand more from the city's development. One of the main benefits of urban agriculture could be that it brings together and combines all of these areas. And, there is money to be invested.



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