

Urban Sack Gardening: Health Hazard or Necessity?

In the poverty-stricken slums of Kibera in Nairobi, a new form of agriculture has substantially grown in recent years. Since there are little means to distribute food evenly and efficiently, many inhabitants became dependent on the food they started to produce by themselves. This practice is called urban gardening and it enables many people to have work that pays off, given that they can directly consume and trade their commodities. Yet it is still questionable whether those commodities are safe and healthy to consume since the circumstances of their production cannot be monitored and the probability of mistakes is larger, given that the average urban gardener is far less experienced than the average farmer. Since functional food security is probably the most important pillar of global health, in the case of urban gardening there is a dichotomy: while it can provide food security, potentially saving many lives from starvation, it might as well turn out to be a health hazard due to toxic substances that can be found in soil, irrigation water and finally in the product that is consumed. However, I argue that, despite the lack of quality control or pesticide monitoring, the environmental health risks that urban gardening might pose are easily comparable with those of other available food sources such as markets, farms, or supermarkets. Environmental issues regarding food such as inadequate soil quality, water pollution, and lack of sanitation are to be taken seriously, yet in my opinion, those are generalizable environmental risks, and not necessarily the ones that are exclusive to urban gardening.

Let us start with some general information on what urban gardening is and what it looks like. As cities are the epitome of capitalistic modernity, many poverty-stricken areas around the world are urbanizing at a fast rate, which causes the “informal settlements”, colloquially called “slums”, to grow just as fast (Gallaher, 2013b, p. 9). This growth results in even worse infrastructure than the already given one, since inhabitants are forced to live more and more densely, not leaving a lot of space for marketplaces, let alone farms or other forms of food production and trade. It is respectively not much of a surprise to hear that many inhabitants must rely on themselves when it comes to nutrition. In fact, a study conducted in the mid-90s in Kenya found that “a third or more of households [are] practicing some form of agriculture” (Gallaher, 2013a, p. 391), for example by growing vegetables or raising little poultry farms. Being one of the most extreme examples of informal settlements, Kibera in Kenya’s capital and largest city Nairobi is one of the most densely populated areas in the world. It is East Africa’s largest slum, with “approximately half a million residents occupying about 2.5km²”

(Gallaher, 2013b, p. 10). As one can imagine, every square meter of land matters here and the inhabitants are reliant on more space-efficient ways of food production. This is where vertical gardening, also known as sack- or urban gardening, comes into play; using large sacks filled with soil, inhabitants of those areas can use even the smallest available spaces for local food production, planting vegetables, prominently kale or Swiss chard, that they can then either consume or sell to financially stay afloat (Gallaher, 2013b, p. 9). The sacks that they use are very space-efficient, allowing plants to be planted on the top as well as on the sides, which gives people the opportunity to grow food practically everywhere without necessarily having to own a patch of land themselves. Though that is a great chance and an effective way to enhance food security while supporting local production, sack gardening poses many potential health risks because of the environment in which it is most often used. Due to the lack of structure in those areas, sanitation, as well as public garbage collection systems, are not sufficient, leading to pollution of various sources, such as fecal bacteria or toxic waste from falsely disposed of garbage. This poses a fundamental problem to the area, as “[l]ess than 1% of households in Kibera are served by a public garbage collection system” (Gallaher, 2013b, p. 11). Most households therefore either drop their disposals somewhere in their own neighborhoods, burn or bury them on their compounds, causing further pollution. The traces of the pollution can be found in soil and irrigation water, which the farmers use to grow their vegetables, leading to them potentially risking their health with an increased chance of diarrheal diseases, among others (Gallaher, 2013b, p. 10). Kale is a great example of that; being one of the most common plants used for urban gardening in Kibera, it absorbs toxins in the soil and binds for example heavy metals in the leaves, which is the edible part of the plant and therefore poses a risk for its consumers (Gallaher, 2013b, p. 10).

There are many things one could do to minimize the risks of sack gardening, especially the origin of soil is crucial here. Since many of the heavy metals and biological contaminants in the soil stem from air pollution, soil in the immediate vicinity of rail- or roadways is inadequate for farming (Gallaher, 2013b, p. 16). Thus, making sure that the soil which is used stems from a somewhat organic environment could already lower the risks substantially, yet of course, for the locals, there is barely any possibility to determine the security of the soil they use. The education of the urban gardeners is key here, exchanging knowledge about healthy and safe food production would lower the risks substantially, yet it is still a big question of how to do that. The distribution of practical farming knowledge is crucial to ensure food security, yet I imagine it to be rather hard to apply practical schooling methods on

a large scale and effective way. A considerable way to circulate this knowledge would be regular meetings like the “stakeholder workshop” that was held in Nairobi from November 14th to 16th 2022, where researchers of different fields met to discuss their findings. I would therefore suggest the implementation of “agricultural workshops”, where anyone with an interest in agriculture could meet with experienced farmers or biologists, to find the most suitable methods for local food production or to share knowledge on how to identify contaminated food or soil.

The question that came to my mind when thinking about this topic is, whether the risk factors are exclusive to sack gardening or whether they are general environmental factors thus affecting every form of food production. Surely there are some direct measures that one can take, as aforementioned one could make sure to use adequate soil and irrigation water free of pollution. Assuming that farmers are more experienced and careful with the production of their food than the average urban gardener, it would also be safe to assume their foods to be less of a health risk. On the other hand, farmers that are producing commodities for large-scale distribution are presumably more likely to use greater amounts of pesticides and other product-enhancing chemicals to increase their potential profits, which worsens the environmental circumstances in the long run. Another crucial factor regarding the safety of the product is its distribution. Though for example, heavy metal contamination is a factor that depends more on the soil and the production of the food, biological contamination often has to do with the places in which the foods are sold. In dense marketplaces, especially in areas like Kibera, where there is improper hygiene and open sewage canals, direct contamination of the product on the market is a massive risk. In Kale samples that were taken from urban farmers, the amount of fecal coliform bacteria that had been found in the leaves “[was] actually much lower than the mean level of fecal coliform bacteria found on kale purchased in other parts of Nairobi” (Gallaher, 2013b, p. 14). When one of the greatest hazards, at least regarding biological contamination, is the distribution of the food, self-supplying vegetables could be considered a healthier alternative to buying those products from markets or stores, as there are fewer possibilities of contamination of the food.

Overall, I think that urban agriculture, independent of where it is situated, could be a phenomenal way of localizing food production. Though its potentials are clearly greater in highly populated, low-income areas such as informal settlements, it could have great potential for fighting poverty or unemployment issues anywhere. By assigning people responsibilities

and giving them work that directly pays off as well as something useful that they can passionately get behind, urban gardening could not only increase food security but give people the chance to take life into their own hands again instead of being dependent on finding a workplace. With the right instructions and shared knowledge about securing the safety of the products, urban gardening could improve and potentially save many lives.

References

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