



The Technology and Urban Farming in Meeting the Urban needs

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The trending questions among urban dwellers regarding vegetables and fruits: Is it organic? Is it safe? Is it fresh? Why does my weekly vegetable purchases cost so much?

More and more people now are involved in urban farming, but what is it? URBAN FARMING IS GROWING OR PRODUCING FOOD IN A CITY OR HEAVILY POPULATED TOWN OR MUNICIPALITY. The farms are small in size which are within the housing compound, in the community garden, or in indoor facilities. Four common urban farming technologies in Malaysia include aquaponics, aeroponics, hydroponics and vertical farming. However, urban farming is relatively new in Malaysia.



Why is there a need for urban farming? Among the pushed factors for urban farming are urbanisation, food security, limited agricultural land, urban poverty. The concept of urban farming is very relevant to city communities who are living in high-rise buildings, with no space for planting. And usually, the reasons are for self-consumption or for beautifying the landscape, as well as creating opportunities

for communities and individuals to manage the short-term social economy by promoting organic vegetable farming.

Around 76% of the Malaysian population are estimated to live in urban areas. Among them are people in the Bottom 40 category, with a household income of less than RM4,360 per month. It is estimated that between 50% and 70% of their income is spent on food, which has led them to be categorised as 'urban poor'. Urban farming is seen as an ideal approach to overcome this scenario. Urban farming has also brought people together as they work hand in hand in their neighborhood farm to grow their produces, this can be as a hobby or even to supply the local neighborhood with fresh vegetables. Technologically advanced urban farms, which can be set up with artificial intelligence (AI) system to optimize the crop yield are available too as some urban farming hobbyist took this opportunity to set up their system and experiment with it throughout the lock down period.



The government has established many initiatives and introduced many policies that could enhance agriculture. For example, under the National Agriculture Policy (NAP) (2011 – 2020), crop production activities have been given special attention to ensure food security, as well as enhance the economic development. The policy emphasised on the use of more modern and dynamic technologies which are flexible and suitable to be used in limited spaces. This initiative aims to increase the production of vegetables and fruits for local community, as well as to reduce the household expenses through self-gardening NP (NAP 2011).



Using technology made it possible to grow a variety of vegetables without having a land. Having an indoor facility, an environment-controlled chamber can save significantly on land and water

consumption. The chamber also provides an isolated environment, which prevents external contaminants from entering, thus, mitigates the need for pesticide usage. Indoor farming helps grow food that are delicious and pesticide-free while still reaching optimal size, taste and nutritional value. This indoor environment approach differs from conventional farming practices as they grow vegetables utilising LED lights, vertical stacks, hydroponic systems and environmental control to keep the internal atmosphere at an optimal constant that encourages optimal plant growth. This is where engineers come in with their expertise and technological know-how.

