

Name : Rushabh Prajapati

Email: prajapatir@mymacewan.ca

Assignment 2 : Decomposition

PSYC -315- AS01

Problem Statement:

With overpopulation and growing demands for food, resource-exhaustive agriculture evolved, causing irreversible damage to the environment, making the need to cultivate healthy, food-bearing plants in urban areas important; therefore, crop cultivation systems need transformation for food security and environmental sustainability through efficient resource utilization, creating a solution for people living amid arid regions who are constrained by water scarcity and limited arable land, as well as facing food insecurity.

Currently, approximately one billion people (16% of the global population) suffer from chronic hunger in a time when there is more than enough food to feed everyone on the planet.⁽¹⁾ According to the FAO, due to the increasing population, food production is expected to rise by 70% before 2050. On the other hand, natural prerequisites of agriculture, viz., arable land and water, have been depleting, with rapid urbanization across the globe. (Hydroponics and Food Security, 2021)

People do not feel food safe until there is stability of food availability, food access, and proper utilization of food. Therefore, they cannot be considered food secure. Food security is having a sufficient supply of food available consistently, having adequate resources to obtain appropriate food, and consuming nutritious food in areas that don't presently have it. Sadly, crops are lost due to droughts, floods, and pest infestations resulting from climate change. (Hydroponics and Food Security, 2021). These factors cause hardship on farmers and communities, increasing production costs, which get passed on to consumers at a higher price tag,

For children, severe food insecurity has been linked to chronic health conditions like asthma and depression. A diet lacking in proper substance – enough calories, protein, vitamins, and minerals – will impede a child's growth and development from before they're born up until adolescence. Food-insecure Canadian adults are likely to die up to nine years sooner than the rest of the population. (The Basics of Food Security | World Vision Canada). Lack of stable and long-term food security will negatively affect the nation's human capital and stagnate economic growth. Food security is therefore critical to economic growth on both a short-term and long-term basis. In such a situation, hydroponics could be a necessary step toward food security.

With hydroponic food production, families can produce food in their homes, and communities can produce locally. Hydroponics is typically an indoor method of growing plants. It is less labor-intensive due to automation, produces greater yields faster, can be used all year long, is not seasonally dependent, and uses fewer resources due to its precise and controlled energy and water consumption. Moreover, combining hydroponics can be combined with vertical farming, a farming practice that differs in a way in which crops are grown vertically or in the air, which means that these vertical farms need much less space to operate than our huge land farms, making it possible to farm in urban areas rather than outside. In most vertical farms, the vegetables are either grown in a reservoir of water and nutrients or aeroponically grown with a mist that includes water and nutrients to help them grow. Neither requires soil for the crops to grow. As well, vertical farms typically sell their crops locally, reducing both transportation emissions and farm-to-table time.

When enough awareness and investment are made, hydroponic technology will reach a critical mass, which will lead to an efficient food system that benefits local communities. As per the above discussion, shortly after urbanization and deforestation lead to less cultivable land for housing the growing population, alternative farming methods will become necessary. Families who couldn't afford particular types of food can now afford it easily, thanks to hydroponics.

PART 2

Sub problems:

Why is food security a global issue?

What are the issues or problems affected by food security?

How is over population and increase in food consumption are exhausting agricultural resources?

What are the 5 components of food security?

What is the biggest threat to food safety?

How do natural disasters affect food security?

How can we improve food security?

Why Hydroponics?

How can it provide direction for solving the problem of global food security?

Sub - sub problems:

Why is food security a global issue?

- What is an example of food security?
- Is food security a social issue?
- What are the reasons behind uneven distribution of food?
- What are other challenges to food security?

What are the issues or problems affected by food security?

- How is world population growth a threat to food security?
- How increase in demand of food a threat to food security?
- What varieties of agricultural problems are on the verge of extinction?
- How increase in scarcity of water and limited land availability are affected by food security?
- How food wastage is a threat to food security?

What should be considered about the problem of food security?

- How can people have physical, social, and economic access to sufficient and nutritious food for a healthy life?
- Why the global population suffers from chronic hunger, even if adequate amount of food is available?
- How to categorize household food insecurity access scale?
- What is the impact of rising food prices on farmers and producers?
- Is there a clear connection between higher food prices and the rise of poverty?
- Why do people not feel food safe?
- How can we educate people about nutrition?

- Do people have proper sanitation and hygiene practices for food utilization?
- How vulnerable are our food sources to climate change or disease?

What are the 5 components of food security?

- Is there a sufficient supply of food available on a consistent basis?
- Are communities able to produce their own food locally?
- Are there not enough agricultural technologies or practices; lack of natural resources or productive land; climate constraints; emergency situations like natural disasters; or health constraints, such as HIV/AIDS, that prevent people from engaging in labor?
- Do people have sufficient resources to obtain food?
- Do people have basic knowledge of nutrition and care?
- If your country has high food security, can people still be undernourished?

How can we improve food security?

- How can farmers make farm from forests?
- What type of food requires more land and fees less?
- How can pesticides and fertilizers harm soil?
- How to target food for direct consumption?
- How can we reduce food waste?
- How can a food bank be an effective solution to improve food security?
- What are the other alternatives to traditional farming?

Why Hydroponics is better than traditional farming?

- What is hydroponics?
- Why does it work?
- What are the benefits of growing hydroponically?
- So can hydroponics improve food security?
- How Does Hydroponics Have Higher Yields Than Soil?
- Which is better soilless farming or hydroponic farming?
- Where can crops be grown in a hydroponic system?
- How will it solve the problem?
- Can all types of plants be grown through hydroponics?
- How can indoor farming be better then countryside farming?
- What are the advantages of hydroponics?
- How much time does a hydroponic garden require?

How can it provide direction for solving the problem of global food security?

- How can we protect agricultural lands from urban spread?
- How best to conserve forests while producing more food?
- How can hydroponics increase your yield and minimize environmental exhaustion?
- Should we instead address global overpopulation?

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