



“Investing in Africa’s future”

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

**AEC307: ENTREPRENEURSHIP AND SMALL BUSINESS DEVELOPMENT IN
AGRICULTURE**

SUPPLEMENTARY EXAMINATION

JULY/AUGUST 2020

LECTURER: DR. K. MUKUMBI

DURATION: 48HRS

INSTRUCTIONS

Choose and Answer **ONE** question

All questions carry equal marks (100)

QUESTION 1

Read the passage below and answer the questions that follow

In Zimbabwe, a backyard hydroponic farm 160 HydroFarm beats drought to grow vegetables

HARARE (Reuters) - In a backyard in Zimbabwe's capital, a 50-year-old mother of two is using hydroponics to grow vegetables for some of Harare's top restaurants, defying drought and an economic crisis that have left millions needing food aid. Venensia Mukarati, whose day job is an accountant, always had a passion for farming, but no land on which to plant.

Just over two years ago she did a web search on how to grow vegetables on the deck of her Harare house, importing a small hydroponics system from Cape Town for \$900 that enables plants to draw soluble nutrients from water.

"The good thing about hydroponics is that it saves water by 90%," Mukarati said in a 46 square-meter greenhouse where water flowed in a maze of pipes decked with plants. "I buy water because I don't have a borehole so I cannot do conventional farming," she told Reuters.

Her immediate desire was for fresh vegetables for the family as the country's economic fortunes deteriorated and grocery store prices spiraled. But she quickly realized her pastime could be a profitable venture. It now makes \$1,100 a month - in a country where some government workers get just \$76.

In hydroponic farming water is conserved because it is reused multiple times. Hydroponically grown plants also require no pesticides because there are no soil-borne diseases.

Much of southern Africa is in its worst drought in more than a century, with crops failing and some 45 million people in need of food aid. The region's temperatures are rising at twice the global average, says the International Panel on Climate Change, spurring the need for innovative ideas to get food on tables.

Harare also faces chronic water shortages due to aging pipes and a shortage of dollars to import treatment chemicals. It takes six weeks for Mukarati to harvest vegetables such as lettuce compared to 10 weeks if the crop is grown in the soil. She initially grew 140 plants per cycle - now she produces 2,600, including lettuce, cucumbers, spinach and herbs in two greenhouses fed by a makeshift system using gutter pipes from the roof.

Lesley Lang, a restaurant owner who buys Mukarati's produce twice a week, said she had "the best lettuce I have ever had the pleasure of buying in Zimbabwe". Mukarati hopes to quadruple production from June by constructing bigger greenhouses on 2,600 square meters of land on the outskirts of Harare. Last year, she began training others to do the same, designing a hydroponic "starter pack" which she sells for \$200.

160 Hydro Farm – Hydroponic farming start up

Food production still remains an important part of the Zimbabwean economy, even more so in the current economic challenges we face. In addition to that imports have become more expensive as the currency continues to depreciate rapidly. Land, a limited and fiercely contested resource in the nation is hard to come by so I was really excited when Venensia Mukarati, owner of 160 Hydro Farm allowed us to ask her a few questions about their innovative venture. It is a hydroponic farm startup that is challenging many of our preconceived notions about how farming is done. Here are some of the questions we managed to ask;

When did you start 160HydroFarm?

The Hydronics project began early January 2018. After some trials of the farming procedure, we established 160 Hydro Farm in April 2018.

How big is 160HydroFarm?

The team currently consists of a total of 5 employees including myself. We have regular customers mainly restaurants, farmers market and individual and only one supermarket. We are currently growing fancy lettuce, microgreens and cucumber still on trial. We have a capacity of 2,600 crops at a small area a 64 square meter greenhouse and a 56 square meter greenhouse

Tell us about hydroponic farming and why you chose it.

I have always loved farming it is in my blood, but the main challenge was that I didn't have enough land. I also needed something new and innovative and through my research, I stumbled upon Hydroponics farming. It fit it in with my schedule as I am a mother and have a full-time job and not much land is needed. I could easily set up the farm in my backyard and that meant cutting down on travel time to a farm as I can check on my systems in the morning before and after work.

You also offer training on hydroponic farming, is that a big income stream for you as well?

When we brainstormed on the idea of the training, we did anticipate that they would bring a lot of income if we conducted them once a week. However, due to economic

limitations on everyone in the country we did not get a lot of participants, so we had to scale down to one training a month or every other month of maximum 15 participants. The trainings do bring in income to assist with the farm operations but not much to make profits.

Many question the supply of nutrients as we are told they come from the soil. How does it work in hydroponics?

So, for every crop to grow they don't need soil, they need nutrients, light and water. With hydroponics, we eliminate soil and use a growing medium such as cocopeat or even wood shavings then add the nutrients to the water.

Challenges you've faced and face in running and growing 160HydroFarm?

Hydroponics is very new in Zimbabwe and I am a pioneer in Zimbabwe I didn't have anyone to teach me. Everything was self-taught using Facebook and youtube. Even setting up the system and buying raw materials it was really difficulty for me. I kept on pushing, trying and learning from mistakes but now I can safely say I have mastered the art of hydroponics and I can now try and grow new crops. The other big challenge that I had like everyone else in Zimbabwe is power supply. My hydroponics system is called Nutrient Film Technique and the water must run 24 hours a day. If there is a power cut, then one can lose all the crops within a few hours.

What are your goals and aspirations?

The aim of the project is to carry out intensive and high turnover production, off a small area, while providing work and leadership experience for local women. We want to grow the project from a backyard to a massive Farm. Also, to increase the crops from only green leaf to include Strawberries, cucumber and tomatoes. We need to have a capacity that will enable us to venture into export markets.

Any words you would like me to add for others who aspire to be like you?

I would say dream big and don't let any challenge get in your way. My girls anticipated hydroponics was a hobby to start with but now they are taking me seriously. The other girl helps with deliveries and the other girls are into marketing. Don't be discouraged by people just follow your dream. Someone said to me, you want to do hydroponics here in Zimbabwe it for countries like Israel that don't have land and water.

- a) 160HydroFarm would like to seek additional funding to build bigger greenhouses. Which source of financing would be appropriate in this case? Explain why you chose that specific source of financing. (10)

- b) Develop an entrepreneurial elevator pitch for 160HydroFarm. (10)
- c) You have been asked by Venensia Mukarati to advise her on intellectual property protection as an entrepreneur.
- i. Name and describe two types of intellectual property that Venensia Mukarati should protect. (5)
 - ii. Explain why it is important for Venensia to protect the types of specific types of intellectual property you mentioned in (i) (5)
- d) 160HydroFarm is a relatively new start up that was started in April 2018. What are some of the challenges it can expect as it grows? Explain. (20)
- e) What can 160HydroFarm do to ensure that the business does not fail in the early years? (25)
- f) If you were the owner of 160HydroFarm what would you do differently in order to improve performance of the company? Justify your responses. (25)

End Of Question 1

QUESTION 2

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- a) Is 160HydroFarm a social entrepreneurial company? Explain. (10)
- b) 160HydroFarm would like to seek additional funding. Which sources of funding would be appropriate in this case? Explain why you chose that specific source(s) of funding. (10)
- c) What are five lessons you have learned regarding entrepreneurship from Venensia Mukarati? (15)
- d) Explain how you will apply the lessons learned to your own entrepreneurial venture. (15)
- e) Develop an entrepreneurial elevator pitch for 160HydroFarm that they can use as they seek additional funding for their business. (10)
- f) What are the challenges that 160HydroFarm is currently facing? (10)
- g) What can 160HydroFarm do to address the challenges mentioned in (f)? Justify your response. (20)
- h) Would you be interested in investing in 160HydroFarm? Why or why not? (10)

End Of Question 2

QUESTION 3

a) The COVID19 crisis has brought both challenges and opportunities to the agribusiness sector. Think of a service related business idea that you would like to pursue now during the COVID19 crisis whilst still a student on campus from the challenges and opportunity (ies) we currently face. Your idea should be innovative, focus on a service you can provide, and be agribusiness related.

- i. What is the problem you want to solve? (10)
- ii. Explain in detail how you plan to solve the problem. (15)
- iii. Prepare a Business Model Canvas for your business. Your response should be in table format. (18)
- iv. Develop an entrepreneurial elevator pitch for your business idea. (10)
- v. Where will you obtain funding for your business? Name three sources of funding and explain why those sources are appropriate for your business. Be specific. (18)
- vi. Many businesses fail in the early years. What will you do in order to ensure that your business succeeds and does not fail in the early years? (25)
- vii. Identify the intellectual property for your business. How do you plan to protect it? (4)

End Of Question 3