The Prospects Of Sustainable Desert Agriculture To Improve Food Security In Oman: Article Analysis

The Prospects of Sustainable Desert Agriculture to Improve Food Security in Oman by Msafiri Daudi Mbaga entails the different proposals and approaches to further improve Oman's food security by elaborating domestic food production with the use of alternative technologies through desert agriculture. Such presumptions were formed for the land and water scarcity without the implication of desert agriculture limits the expansion of domestic production. Approaches such as, land and water saving approach inculcating promotion of traditional crops, hydroponics and greenhouse farming, seawater greenhouses, rainwater harvesting, investing in biosalinity research, pink LED technology, and lastly aqua culture investing. With these new found probabilities, the country's dependence on imported goods would be lessened and in the long run improve the country's food production.

The article is about food security, most especially in countries like Oman where in for most parts are surrounded by desert where crops are hard to grow, such unique geographic location resulting to low food production "locally" but high in food consumption. A country like Oman is only dependent on imported good commodities that's why Mbaga suggested proponents which can help solved the problem of food production in Oman and introduce the concept of desert agriculture. Furthermore, because of land and water scarcity the expansion of the agricultural production is limited and by 2050 if not alleviated the country shall be totally dependent on the imports to level the food security needs of the country, a daunting probability that inflicts fear among the people; other countries were also stated but only Oman was exemplified. For desert countries like Oman even though rich with oil and gas deposits capable of importing goods, the sources of the said necessities are not unlimited and through time might get depleted sooner or later. The 2008/2009 food crisis where in India and Pakistan imposed a rice embargo, taught the country a lesson that it is not enough to have the financial means and capabilities to transfer imported goods but the country must also be capable of producing one's own food necessities so that the country can be prepared to supply its people without the import from other countries, which in the case of Oman can be made possible through the proponent of desert agriculture with the help of technological advancements. Desert agriculture is the harvesting of crops suited in harsh conditions such as the desert, one good example are wild plants which easily adapt to its environment, such type of farming could be of great help in lowering the use of land and water and in return its compensation. It was made possible for countries like Israel and Egypt, so its implementation on a country like Oman might results to a feasible outcome. It is believed that without the conceptualization of desert agriculture in improving the food production, a problem that can and will be encountered is the lack of land and water to inculcate and grow crops, such factors that are vital in food production. One of the prospects stated by Mbaga in increasing food production in the country by desert agriculture was Land and water saving technologies where in it is the type of technologies that deals with lowering the dependence on land and water to produce the same amount of food. Second is the promotion of traditional crops (e.g. tree crops & dates and lime) not only will supply Oman but in the long run would also boost the countries economic standing because of the possibility that such traditional crops be of need to other countries and such can be done through exporting goods and lessen the country's spending on imported goods. It was stated that one of the food commodity that Oman spend so much on is wheat. Third is hydroponic and green house farming, hydroponics is a type

of an agricultural technology that gives nutrient to the water itself and not anymore on the soil for plant nourishment, it is believed that through this process one can produce a high quality of fruit or vegetable available all year round. That is if its combined with green house farming which rendered positive results in countries like Al-Dakhelia in 2008 which has produced 20,000 tons of cucumber and in Qatar (created its own Lucious farm through such proponent able to produce a number of crops) and Emirates (able to produce its own supply of crops booming with variety) which has an additional component of solar energy. Fourth, is seawater greenhouses which is basically the use of salt water turned fresh water in nourishing and growing of food in regions surrounded by dessert, this is the type of proponent that as the article stated is already available in the country but still needs work. Fifth, is rainwater harvesting, as the words itself is the collection of rainwater by aquifers, which can be a solution but only for a short period of time for rain scarcely happen in a country like Oman but due to climate change according to the article some parts of Oman, particularly in the mountain ranges of Jabal Akhdar and the Dhoraf are experiencing an increase in rainfall making such prospect feasible. Sixth is investing in biosalinity research, it is a type of research which focuses on changing the concentration of salt water and once changed be of use as the water to irrigate agricultural crops. Furthermore, it is also about the studies of biochemicals and physiological mechanisms of plants in choosing which breed would be able to tolerate such concentration of water and render positive results in the production of crops. Seventh, pink LED technology, it is a type of indoor planting where in red and blue led light will be used and would act as a sunlight to generate photosynthesis and supply the needs of plants in order to grow. According to the article, that in the spectrum when plants undergo photosynthesis only the red and blue lights are absorbed by the plants, this was a concept devised by a Netherlands based company called Plant Lab. The eight and last of proponents is the investment in desert aquaculture, the most different from the first seventh proponents. This proponent focuses on the breeding, raising, and harvesting of plants and animals in a water environment, such as tanks, ponds, rivers and lakes. It is believed that such proponent can be of help in Oman considering that the current fish prices have been very high to the point that low-income households can no longer afford it. These are just some of the stated proponents that requires thorough research and strict implementation in order to yield positive results that would solve the country’s problem in food security.

This article by Mbaga impacted me in a positive/agreeing and negative/disagreeing way. The article was very informative to the point that it enlightened me about the deeming factors that limits a country from being stable because of its geographical location even though having all the means and resources to supply the entire country for the next century but is dependent than that of other countries food commodities and as we all know food is one of the most important parts in one’s daily life, without it one cannot live even though you have all the money to buy one. No source means no produce. The prospects were very particular, in which the end goal is always to produce more food and improve what has been or already existing for the country. As an example, a proponent that is already available for Oman is seawater greenhouses but according to the article it is in need of more research and study. Another is the rain water harvesting, the only limiting factor is the rain but is possible. It is impacting me in a both a positive and negative way for the author present such proponents in both achieve-able and not feasible way where in some proponents in the article would be stated as in need of more research or already available but not yet functional.

The parts that I agree with or impacted me in a positive way, was that he presented the country not as a suffering country but is ready for change. The country has all the means and resources to make the proponents turn into reality, such as the seawater greenhouses which shall turn

seawater into fresh water. One good example of the seawater greenhouse proponent was the one made by Matt Damon in the movie “The ,artian”. He made it possible even without oxygen, on a planet where there is no life, source of water and the soil is not tender. In Oman, they have it all, water, soil from the desert, the only thing lacking is implementation. There were also numerous data table from FAO or food and agriculture organization that made such proponents promising. Next was rainwater harvesting, one it is very easy and everyone will be able to contribute in helping boost the food production of the country. These are just some of the proponents I agree with and quite honestly all of them are but these are the one that stood out.

Lastly, the parts I don’t agree with is the parts where the author is also not sure If his stated proponents are also feasible, it makes me as a reader be less interested on the presented concept. One of them was the promotion of traditional crops, he only stated statistics of what would happen and the end results if it were promoted but he didn’t state or enumerate processes on how to do so. It makes me wonder how can a simple farmer from Oman if willing to help be able to help his own country if he was only given statistics and not ways on how to improve food production of his own country. Another is the presentation of the tables, based on the article in the year 1973-1976 crops were abundant, meaning more than the country needs. I just wish the author stated reasons as to why such statistics happened so that it can be implemented in the present and who knows, maybe it’ll be the catalyst for an increase in food production in the country. Same goes with the proponents on pink Led, desert agriculture, investing in biosalinity, hydroponic and greenhouse farming. Processes on how to achieve such proponents should’ve been stated so that normal Citizen can be of help.

Land and water scarcity will no longer be limiting agricultural production if the stated proponents were to be fully implemented and be practiced. Food production in Oman will increase significantly if the people were to be made aware of the long term impacts of such crisis happening in their country and letting them know that they, as citizens can be of help in solving such crisis. It is relevant to my course, for as a chemist student I should be of help in the research and producing processes of finding ways to produce crops in a country like Oman where soil is not made for planting and water is scarce. Specifically in the proponent of finding means for salt-water to be feasible and be of use like a fresh water so that water will no longer be a limiting reagent in improving the food production in the country. Lastly, this article is a little useful for I was made aware that as a chemistry student I can create a solution or be of help. One act of kindness creates an endless ripple, this is for the farmers. I just wish the article was made to be read by everyone whether in a country like Oman or not because who would benefit from the success of these proponents if were implemented other than those residing in the country itself. Other farmers may or may not have access to proper education I just wish the author also made it comprehensible for people like them because they are the ones’ who knows more on this and can be of help in improving the food production for it is their job, their livelihood. They deserve to take the credit and be recognized for the impact they can contribute to the economy, to us.