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South Korea, Sustainable Agriculture

How To Help South Korea Stand More Independent

As an American I don't think much about world trade, and how that affects us in our daily life. We never think of where our products come from. Especially coming from a small town in the northern part of Minnesota where we don't see much trade being taken place. However in South Korea world trade is vital to be able to flourish and survive in daily life. As urban growth begins to choke out the rural practices and put themselves on more dependence on foreign trade. Especially in the department of agriculture, leaving the South Korean citizens vulnerable if ties were to break between the countries, leaving them stranded and unable to provide for themselves. South Korea needs to develop systems so South Korea can stand on its own, and not need to depend on other countries to take care of them. By standing more independently, South Korea can take more pride in what they have accomplished, and then they can stand stronger together as a united country. South Korea now has an aging population, leaving fewer South Koreans in the future to pick up where the previous generations had left off. This can leave a lot of responsibilities for the younger generations to have to hold, these responsibilities can be overwhelming to the country. Before you I have laid out some problems that I have found in the country of South Korea, and also some good solutions to those problems that will not only solve the problem, but will also help the country as a whole. Being that South Korea is a high ranking country in terms of human development. BEing ranked high helps with the ability to adapt to their surroundings and overcome challenges that they might face in the future. South Korea was heavily forested especially in and around urban areas, leaving very few natural resources left for the country. This forces the country to import a lot of its supplies in from other countries in able to provide infrastructure for the growing urbanization throughout the country. I hope these topics can help you better understand the points that I wish to get across, and help to influence the reasons I think we should help South Korea have more sustainable agriculture.

South Korea holds 45% of the Korean Peninsula (ITC, 2006). They are surrounded by water in three directions, and North Korea to the north of them. They must use ships to import and export most of the goods that they use in their daily lives. Agriculture only contributes to 2.2% of the GDP with the rest going to industry and services. This opposes a big problem. With 70% of South Korea being mountains, the people of South Korea are forced to live to the lower regions of the country where they can use the land and withstand the brutal winter conditions (CIA, 2019). Most of the mountains are in the east and northern parts of the country. Leaving the southern and western plains for the South Koreans to live in.

The average number of people per household are 2.53(Statistics Korea, 2017). Each mother normally has about two to three children in their lifetime. South Koreans normally live in a house with 2-4 bedrooms and typically one bathroom. Houses still have the traditional look to them with the artistic roofs and other traditional virtues. However they are beginning to become more modern looking with more intricate shapes and building styles. The normal child will receive about 17 years of education (CIA, 2018). The normal motivation found in students for motivation in school was taken by a survey that students had taken in school that was completely anonymous. The survey concluded that 75.5% of the student's reason for trying hard in school was because the students believe that study is necessary for their future. The

other answers were the following: because studying was fun (17.9%), they felt ashamed if they did poorly in school (25.9%), because unless they study, if they don't study they will be punished (13.1%) (Statistics Korea, 2018).

South Korea's minimum wage is currently set at 8,350 won which is \$7.37 per hour. The typical jobs that are seen in South Korea are industry and service jobs. These jobs usually make \$2932.78 dollars a month. The average working age in South Korea is 15-64 years old. However jobs such as traditional farming and fishing practices are dwindling due to urbanization and an aging population with these jobs not being replenished.

As of 2017 South Korea imports 457.5 billion dollars worth of material each year. By importing this many goods this ranks them ninth in the world for importing (CIA, 2017). These majority of things imported are: crude oil/petroleum products, semiconductors, natural gas, coal, steel, computers, wireless communication equipment, automobiles, fine chemicals, textiles. None of these are agriculture based. Fishing is getting harder and harder as fishermen are having more trouble finding enough fish. South Korea doesn't have much farmland to work with. Only 17.2 million ha are cultivated currently in South Korea. This has went down from 22% in 1980. 45% of the crop land is Rice paddies, and the rest is dry fields (OECD, 2017).

A solution to the problem that South Korea is seeing a decrease in its available crop land is to use its technology to help create more hydroponics type agriculture systems in places where people can't normally farm. Doing this will not only be able to provide food for the country. South Korea could use their industrial might to make this big enough so they could not only make their own food, but it could also serve as a vital export and raise its GDP. Right now Agriculture is only responsible for 2.2% of the countries total GDP. This is due to the little useable land that is in South Korea. Available farm land has gone down in recent years is mainly because of urbanization. The making of highways and cities take a lot of land and resources to construct. Also by building highways it gives citizens the freedom to move more. This means people can spread out and build more houses.

Hydroponics is where plants are in rows of plastic holders. The roots from each plant hangs down, and collects nutrients from the water underneath the row of plants. The water underneath is enriched with minerals that the plants can utilise to construct itself through photosynthesis.

To understand what I am talking about I'd like to dive deeper into photosynthesis more to totally wrap our heads around what the idea of hydroponics is and how it is effective. Photosynthesis is where plants take in carbon dioxide out of the air and store in in the leafs. Plants also take in water and minerals from the roots to help with photosynthesis. The process of photosynthesis is plants taking carbon dioxide and water and sunlight. Through a chemical reaction the products of the reaction would be: heat, energy, and oxygen.

The project to create hydroponics in South Korea would be funded by the South Korean government. This would help bring many science based jobs to the area as much of the workforce already is. People in many communities could help out by working on building these projects. This would help build up the local and nation's economy. After the projects are set up private business can take over and the hydroponics can be used as any other commodity. Being that this would be a major improvement into modernizing how agriculture is seen through the eyes of many people throughout the world, South Korea would be seen as a world power that is becoming more and more modern. They're many benefits in being in the world's eyes. Tourism can increase to see the sights of South Korea and the new hydroponics that it would have.

South Korean leaders could also use the hydroponics to utilise the structure to become an educational system. This could make it easier to develop workers in the field of hydroponics. This could further advance the educational systems that South Korea already has.

Another big rising problem that is concerning South Korea and its sustainable Agriculture is fishing. Fishermen are needing to go out further and further to find fish that still don't compare to earlier quantities. "While most countries continue to focus their fishing efforts on local waters, Taiwan, South Korea, Spain and China have aggressively subsidized vessel and fuel costs to encourage their fleets to operate thousands of kilometres from their home ports," said lead author David Tickler, a postgraduate student at UWA's School of Biological Sciences. Aquaculture is responsible for 42% of the nations fish income (NOAA, 2011)

To fix this rising problem I think that South Korea needs to set up enclosed bodies of water so then they can control fish and sea plant populations so then they can be harvested to distribute as a commodity. The government and/or private agencies would set up structures that would contain fish and all the things needed so they could thrive. In these man made spaces they would be able to monitor these species of organisms. By doing this in Korea along their coastline that they are very plentiful in, it will produce many jobs and help the local and national economy and increase the fishing GDP. By making more of these man made lakes their would be less need for people to use so much fuel to go and try to find fish a long way from the coastline.

The Country could control the populations of the fish and plants that were living in these enclosed areas. Government agencies such as the Department of Natural Resources like we have in Minnesota which regulates how much can be harvested annually and how to best practice the ways in which take care of these plants and animals and plants. By controlling the populations of the plants and animals it could ensure the lasting of the species so they cannot go extinct. The species will be able to be monitored so then the diseases and pesticides that can harm these animals and plants can be controlled so then the plants and animal populations can thrive in their environment. When the plants and animals thrive then they can reach their full potential to be harvested by the South Korean government. So then the South Korean government isn't wasting any resources or money making as a product that isn't going to be any good for them.

If the South Korean government doesn't take full advantage of this opportunity and make the most of the hydroponics system it could also hurt them financially. By not having a quality system then the South Korean will have wasted their time, money, and smart minds in creating something that is of no use to them.

Together we have seen the goods and the bads of sustainable agriculture in South Korea. We learned the geographical layout of South Korea. How South Korea struggles with a landscape covered with mountains and lots of bare land. We learned how South Korea has recently logged off most of its trees, and now they are struggling to harvest natural resources. The younger generations understand that they need to do well in their education, not only because their parents pressure them to, but also because they want to. We looked over hydroponics and how plants use the water underneath them to collect the minerals and nutrients in able to survive and thrive. I touched on how photosynthesis is vital for the survival of plants, and the process that takes place in those plants. I believe that if we integrate these new ideas into the country it will shine a positive light onto the country. This positive light will attract people from all around the world to not only see South Korea's new infrastructure, but also tour the rest of the beautiful landscape. These products would create many construction jobs throughout the country, which would help the economy and take the unemployment way down. The country could use the hydroponics and aquaculture systems to utilise them as educational systems, to not only interest students about going into those fields of work, but also give them the knowledge of where their food comes from, and why it needs to be done that way. We noticed that South Korea is having a problem with their fishing. The solution that I proposed was to have aquaculture in the waters near the coast of the country. These aquaculture positions can be used to survey the populations of the different animals and plants living in the positions. To not only ensure the quality of the animals and plants harvested, but also preserve the healthiness of the organisms.

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