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Kenya, Factor 7: Animal Agriculture

To say that animal agriculture is common across the world would be an understatement. Growing up in south central Kansas, we learned that it was something that impacted our everyday lives. The food we eat is readily available from a fast food drive-through or a grocery store just down the street. For those who find themselves living in Kenya, they understand they do not have such an advantage. To what is to us something so simple, would be absolutely luxurious to Kenyans. The people in Kenya are starving, and their lack of proficiency in animal agriculture is really beginning to take its toll.

A typical Kenyan farm is much different than what one would find in Kansas. Instead of big painted barns, a farm in Kenya is simply a field. The average American farm tends to be around a few hundred acres, but if you were to travel to Kenya, you would find that their average farm size barely reaches over one acre. This is not surprising, considering that 75 percent of Kenyans make their livings by farming.

Kenya produces large amounts of coffee and tea. Mnazi, or palm wine, is popular closer to the coast. Lager is made locally as well, and made using water, malt, hops, cornstarch, and sugar. However, in the urban parts of Kenya, illegal alcoholic beverages, such as *chang'aa*, are known for being lethal. Favorite foods in Kenya include roasted corn cobs, homemade flatbread called *mandazi*, and kebabs. Kenyans also enjoy a feast by the name of nyama choma, which is their version of a barbeque.

Commonly grown crops in the country of Kenya include maize, beans, peas, and potatoes. Millet, cowpeas, and cassava are also becoming popular as they resist disease and drought, making them a great agricultural product for the Kenyan climate. From the United States alone, Kenya receives $556 million in income alone, stemming from products such as coffee, refined petroleum legumes, and nuts. Horticulture is also another source smaller farm operations use to receive 12% of Kenya's total earnings from exports, or a total of $654 million. On the other hand, Kenya spent $17.6 billion dollars on imported goods, such as telephones, video displays, and automobiles. (Simoes, 2016)

One issue can contribute to many very rapidly. Drought is one of the many problems most farmers face, and in Kenya, it is no exception. In 2011, an extreme drought caused farmers not only to lose most of their crops; but most of their livestock as well. At the other end of the scale, floods and tropical storms do not help in this situation either. These issues that mother nature provides are contributing factors to the hardships Kenyan farmers must combat to have a successful year. (Kenya Data Portal, 2017)

Apart from not being able to provide enough food, the market prices of food in Kenya are often fickle. Kenyans find themselves unable to purchase quality food due to sky-high prices, and at times, people are forced to eat unhealthy, cheaper food. This leads to various forms of both micronutrient deficiencies and malnutrition. Not only are the prices of food caused by the extreme drought that has affected the country, but also due to the high cost of fuel used to transport fuel. (McKenzie, 2011.)

Two-thirds of Kenya's population grow and raise their own livestock for consumption. However, animal diseases in Kenya are quite common. Veterinarians are uncommon and thus, animals are often left untreated due to the high cost of medicines. Ticks, East Coast Fever, Heartwater, and Anaplasmosis are just a few of the diseases that affect livestock. Most of these diseases have side effects that affect the carcass value or cause them to be unsafe to eat. (Farm Work in Kenya, 2017)

Water, commonly used for cooking, is often infested with parasites that cause illness. One water-borne illness is Malaria. In Kenya, it is one of the most recorded health problems, as it kills around 26,000

children a year, and around 3.5 million children are likely to be diagnosed with the disease. Malaria is caused by mosquitoes infected with the parasite, and transferred to humans through their bite. (Marshall, 2011)

Seeing as this is a huge concern, Kenya's government has decided to step in. In 2008, the Poverty Reduction Strategy Paper (PRSP) created projects that can help improve Kenya's water supply. The PRSP developed two multiple use dams along the Nzoia and Nyando rivers. These dams will have a capacity of 2.4 billion cubic meters, and will supply water for livestock, human use, and irrigation. Another project by the PRSP strives to meet the needs of towns along the coastline with water sanitation and supply. Now, not only nearly 30 towns be able to have fresh water, but will be able to have fresh water for tourism as well. (Marshall, 2011)

Starvation is another large problem in Kenya. Currently, over one million people are starving. Kenya's government needs over 500 million dollars to support the country's food supply. In 2009, the maize crop was said to be 28% below normal. Maize is a large component of Kenyan diets, comprising an average 96% of their diets. Non-native crops such as pineapple, cabbage, spinach, and carrots, are hard to care for; since they require so much more water than what is normally grown in Kenya, and need to be sprayed with pesticides quite often. Before the major drought began in 2011, over 200 types of indigenous crops were grown, but now, due to lack of water only 30 species remain,

The solution, Kenyan farmers have found is to continue to grow the few indigenous plants they still can. One farmer reported that grain amaranth has much more protein than the classic maize plant. With the lack of basic health care that is available to Kenya residents many have turned to utilizing plants for health care needs such as, using the Spider plant to aid in constipation and Elephant Ear to treat rapid heartbeats. Ingenuity such as these are not common in well developed countries such as America, however in third world countries they do what they can to survive.

The numbers of livestock are high, but are seldom eaten as the Kenyan diet mostly consists of mostly cereal-based foods. Many communities grow several cash crops, which are taken to market to be sold for their living wage, leaving little left for their families food consumption. Younger children mostly eat porridge, made from maize and millet, yet this 'meals' lack protein and other important nutrients that are vital for their development. Without these nutrients, stunted growth becomes frequent. When they become older and enter the workforce, those with development issues will earn 20% less income than average. Stunting affects 23% of children from six months to nearly two years of age. When the children get older, they switch to adult diets, which are often heavier meals and are harder to digest. Many children develop Anemia, due to iron deficiency and malaria also has an effect. (Global Alliance for Improved Nutrition)

Malaria has many effects on the human body. After a bite from a mosquito that is a carrier of the disease, the parasite enters the liver, where it can live up to more than four weeks. Then, the parasite re-enters the bloodstream where it affects red blood cells. This causes a disrupt in the process of the creation of red blood cells, resulting in a buildup of toxins as the blood cells are destroyed. With the toxins in the blood, the side effects begin to appear: nausea, chills, a lethal fever, and aches. (Malaria, 2012).

Animal protein contributes only to 0.5-10% of one Kenyan's average protein intake, since meat is only eaten on special occasions. Not only are beef, goat, and sheep (mutton) are costly to those in Kenya, but the meat from these animals are seen as a delicacy In addition, milk and eggs are seldom consumed. Without these foods, young Kenyans lack calcium, iron, vitamins A and B-12, and other micronutrients, along with energy and fat.(Bwibo, 2003.)

The World Food Programme (WFP) has stepped in to help pre-primary and primary age children, since those years are the most important to any child's growth and development. WFP feeds 770,000 children

with school meals in 1,700 schools across the country. Mid-morning meals are also served to boost adequate nutrition. (World Food Programme, 2017)

Kenya does offer agricultural education programs in their schools, however, they do not take it as seriously as they would here in rural America. Due to financial struggles, agricultural education programs are often run by teachers who lack knowledge in this field. Instead of students who plan to make their livings as farmers, these classes often attract more students who didn't consider agriculture as a main priority. In Kenya, agricultural education classes do not include a variety of topics and lessons are often theoretical. This leads to students not having sustainable or practical skills. http://www.worldagroforestry.org/downloads/Publications/PDFS/b12897.pdf

A program that developed me into the leader I am today is 4-H. Recently, I discovered that 4-H clubs exist in countries in all parts of the world. Kenya is no exception, with the first clubs being formed in the early 1960's. In the place of the four H's, are four K's, which stand for the Swahili words kuungana; to unite, kufanya; to do, kusaidia; to help, and of course, Kenya. 4-H'ers across the United States learned to recite a motto known as "To make the best better", while those in Kenya recite "Nina Ahidi", which translates to "I promise". In 2011, there were around 5,215 4-K clubs found in Kenya, with 181,400 members. 4-K is a club targeted towards younger students, and when they "outgrow" it, they are given the opportunity to join the Young Farmers club. The Young Farmer's Club is suited for those who are 15 to 24 years of age, and is very similar to 4K, however, the membership numbers are low. http://msue.anr.msu.edu/news/4h_in_africa_tanzania_ghana_kenya_ethiopia_and_south_africa

Similar to the FFA, those involved in the Young Farmer's Club is run by its youth. Just like in America, students work hard in managing their projects, whether it be raising livestock or growing produce. As a club, members decide what crops they should grow. After harvest, the youth are given cooking demonstrations to take back to their families. Although this is a positive step in the direction of better nutrition for the students, there are few manuals for farming technology. Even the club manuals are out of date and even out of print. The need for the improvement of agricultural education programs is a must, but they can not move forward due to the lack of proper funding. http://www.fao.org/docrep/w1765e/w1765e0e.htm

Many college students across the U.S. who plan to major in agricultural education often have the chance to travel abroad to countries such as South Africa. However, if our country's students were to pay a visit to Kenya to teach them more sustainable practices, it would be beneficial to both countries. For Americans, they could get an actual look on the factors that play into world hunger and plan more ways on how to end it; and for Kenyans, could learn more about agriculture; more specifically, how their food reaches their plates, and how different animal products can affect their diets in a positive manner.

When it comes to raising animals, students are often found raising smaller animals such as poultry and rabbits since they are easier to handle. Raising both meat and dairy type goats has become popular in Kenya due to high demand. Not only that, the climate and weather is very suitable for these animals. The breeding ratio is quite large, which is one buck to twenty-five does. Raising goats is also for everyone in Kenya, as it is one of the best income sources in the country, especially for the poor. http://www.roysfarm.com/goat-farming-in-kenya/

There are quite a few benefits from adding both goat meat and milk into one's diet. Not only is the meat lower in fat than chicken, but higher in protein than beef as well. There are also lower levels of cholesterol and saturated fat, combined with high levels of iron, which makes it a leaner choice when compared to chicken, beef, and pork. http://www.livestrong.com/article/367559-is-goat-meat-healthy/

Goat milk is also beneficial, as it boosts metabolism and one's immune system. It is also a great option for those who are lactose intolerant and aren't willing to give up dairy products. However, it should not be given to young children due to their nutritional needs. https://www.organicfacts.net/health-benefits/animal-product/goat-milk.html

Goats are a better option for those in Kenya who want to raise livestock, compared to poultry and rabbits. Rabbits and chickens are often needed to be kept inside, and are high maintenance due to the ventilation they need. Chickens are also more susceptible towards disease compared to goats. These diseases can also spread to humans. Feed can also be costly when it comes to birds and rabbits, as they are fast growing animals, while goats can simply graze outside.

As someone who is passionate about feeding the world and a member of the livestock industry, I would like to start a program where FFA members raise either meat type or dairy type goats to donate to those starving in Kenya for free. This would be a great opportunity to not only to teach FFA members about feeding an animal for butchering, but to lend a helping hand to others. By doing this, we can take a step closer to ending hunger around the world. In conclusion, one of the major things the people of Kenya need is a more diverse diet. Often times, due to the fact that healthy, high quality foods are too pricey, It is our job, as a country with higher food security, to reach out a hand and make sure that everyone has a meal to go through. Nobody in this world deserves to miss a single meal in their lifetime.

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