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Mozambique: Improved animal health to increase stability and benefit farmers

Mozambique is a country that is wealthy in the sense that the community works hard to feed and support their families to put food on the table. This country nestled in the southeastern corner of Africa has a many varying land types, from coastal lowlands to uplands in the center of the country all the way up to high plateaus in the northwest and mountains in the west. (The World Factbook) The terrain is not the only factor that challenges agriculture in Mozambique, the climate can dangerously change from one end of the spectrum to another. Farmers and harvests alike are vulnerable to extreme climate changes such as severe drought and excessive flooding. (Our Africa) As well as lack of storage, the drastic climate changes account for an annual thirty to forty percent crop loss, which adds to the glooming black cloud of food security that hovers over the entire country. (Our Africa) To heighten the trials the country has gone through Mozambique experienced tough times trying to secure independence in the 1970s and a prolonged civil war. The country surely was not handed a smooth path to follow. (The World Factbook) Due to the amounting variability and vulnerability of Mozambique's people and crops, food security continues to be the main issue on everyone's mind.

The average family in Mozambique is much more than a bunch of statistics, the average family has to grow their own food supply and then wonder and question if that will be enough to get there family through. Family size in an average Mozambique rural household is 4.8 people, and a median of five people. (World Food Programme) This is a big difference to the average American household which has an average of 2.59, and the majority of American households do not have to cultivate their own food. (United States Census Bureau) This could be another factor in why Mozambique is being stricken with food security, more people to feed per household. Twenty- one percent of households are headed by women and only eighteen percent are led by a person sixty years or older, the remaining sixty- one percent is headed by a male. (World Food Programme) The diet of an average Mozambique ranges from where they live, from fresh seafood on the coast to cassava in the plains. Other common fairs include corn porridge, millet, rice, beans, coconuts, and potatoes. As well as meats like chicken and steak. (Food in Every Country) Meals can also vary to what each family can afford and what yields they have available to them. It is always questionable. A large amount of young children attend primary school, approximately eighty percent of the population; a much diminutive amount less, seven percent attends secondary school. (The World Factbook) The healthcare in Mozambique has some things to be desired. There are 0.03 doctors per 1000 people in Mozambique, and there are 0.7 hospital beds for every thousand people in Mozambique. The family demographics in Mozambique are another factor that does not assist the people in securing a liable and sufficient food source.

About seventy percent of the country's population lives in rural areas and have to cultivate their own food. (The World Factbook) The average farm size of a Mozambique farm is one acre or less, and these are usually tended to by the family as it is their means to stay alive and feed their families. Smallholder farmers usually grow crops for their own families such as the most popular maize, or corn. (Our Africa)

Other common yields include millet, rice, and beans. (Our Africa) Some farmers, although this is more uncommon, are contract farms that produce cash crops. The most popular cash crops grown by farmers include tobacco and cotton, sugar and cashews are also a popular crop to grow. (Our Africa) The agricultural practices are those not even in the same league as the ones we experience here in the United States. The unsophisticated practices most commonly go to the extent of hand held hoes which are what the smallholder farmer uses to tend to his crops. Farmers do though often use organic compost for fertilizer and mulching to preserve soil moisture and keep out weeds. (Agency for Cooperation and Research in Development) One agriculture practice that is causing more damage than good is the slash and burn method. This method of agriculture has been used for years in Mozambique, but is ultimately putting the local farmers at a disadvantage and destroying farmland and increasing pollution. (Aga Khan Foundation) Due to agricultural practices of the past and inefficient growing methods crops are struggling in Mozambique and affecting food security.

The farmers and agricultural workers of Mozambique know what they have to do in order to grow and provide for their families, but there are things that stop them right in their tracks. In my opinion one of the largest factors that are keeping the Mozambique people living with food security, is the fact that they do not own their own land. In Mozambique the land is owned by the State, and cannot be owned or rented by *anybody*. The lack of ability to own land lessens the opportunity for people to find and obtain land to grow their food on. The equation is simple when the land is not available to the citizens and people who need it, there is nothing they can do to try and grow their harvests. The two legal ways to acquire land is to inherit it or be granted access by the government. The later of the two can sometimes be difficult and seemingly impossible to achieve. Another way to find land is to informally use it, or use it when it is technically not yours to use. The third way can be very dangerous, due to the fact that it is illegal. (World Food Programme) Another risky aspect that can play a role is the fact that forty percent of farmers cultivate in the highlands, therefore they are dependent on rain fed crops. (Nkala) Other factors that lead to lack of food security are not necessarily controlled by the State or citizens, but by Mother Nature. The fact that so many farmers lose crops to high amounts of rainfall or severe times of drought is always causing fret upon the farmers of Mozambique. (World Food Programme) Next to the fact that the people cannot own their own land, this is the other most severe problem keeping the people from living without fear. No one can control what Mother Nature does. Yes precautionary measures can be taken, but it is not enough to stop the rain or bring the rain; nor is it enough to provide a safe and secure food source for the farmers of Mozambique. What could help to provide a more secure food source would be the people of Mozambique able to own their own land. Due to the fact that we cannot outsmart Mother Nature the measure of simply offering people the chance to own their own land would surely give more stability and security. Also, I do believe it would encourage people to give more care to their crops if they were able to have a sense of ownership for the land they are harvesting. Other major barriers to improving agricultural productivity include lack of fertile soil and the use of low yielding traditional varieties. (Agency for Cooperation and Research in Development) Also the use of untreated soil and limited us and lack of access to fertilizers and chemicals, such as the ones we have here in the United States, as well as traditional, unsophisticated tools, as previously mentioned. (Nkala) In Mozambique there are more factors preventing agricultural production and success than factors that encourage and assist the triumph.

The causes of a shortage in work and earning a wage are prevalent in Mozambique, as it is in other countries around Africa. Men and women spend the majority of their time cultivating their own fields

trying to feed their families that there is not much time left to try and work. Their main priority is feeding their families and that is what comes first, extra money is a second priority. Another barrier to employment and earning is the high occurrence of HIV/AIDS. The national prevalence in Mozambique is estimated at fourteen percent, and the mortality rate is at 74,000 deaths annually. (The World Factbook) Of course there are other diseases and illnesses that strike the country, but the most severe is HIV/AIDS. Even though the main priority is feeding their family, Mozambique people still need an opportunity to earn some money and further more support themselves and their family.

In relation to the gaining of access to food markets and adequate nutrition there are other barriers. It was reported that farmers lose forty percent of their crops annually in Mozambique. (Agency for Cooperation and Research in Development) This number is astonishing, that is almost half of their yields to lose. So theoretically farmers are working and cultivating crops to only receive sixty percent of what they work for on their kitchen table. This is a very relentless issue that is caused by lacking proper storage as well as poor transit links. Then when you further think about this, they lose forty percent of what they cultivate; this does not already count what they lose due to drought or excessive rainfall. For instance, if a farmer has one acre of land to feed his family and loses a two-tenths of an acre to drought and then once cultivated loses another four tenths of an acre, the farmer has lost sixty percent of his yields, and only has a small amount to feed his family. And that is just one farmer, where does it leave the rest of Mozambique?

Animal health is a large issue in Mozambique, and improving animal health can ultimately improve the livelihood and food security of the people of Mozambique. Also, livestock are a large part of life in rural communities in Mozambique. Six percent of households own cattle, twelve percent own pigs, twenty-five percent own goats, and an astonishing sixty-four percent of Mozambique rural households own chickens. (ILRI) Cattle in the family sector are mostly composed of the Nguni type in the South and the Angonia type closer to Malawi. (Timberlake and Jordao)“Cattle are kept in a traditional manner and for the traditional reasons of status, bride price, as a means of storing and acquiring capital, risk-reduction in mixed-farming systems, draught power, for home consumption, for meat and milk production.” (Timberlake and Jordao) The average herd size is about ten head of cattle. (Timberlake and Jordao) Pigs in smallholder sector Mozambique are mostly just left to forage, but some raise them in pens and feed them. (Timberlake and Jordao) Usually each family will only have one or two pigs due to food scarcity of food. (Timberlake and Jordao) Goats are shown to be more evenly and more commonly distributed throughout Mozambique. Goats are mostly of the Landim breed, which are kept close to villages, and represent valuable form of livestock for smallholder production. (Timberlake and Jordao) Poultry are very popular in the Mozambique rural sector and are mostly just fed scraps.(Timberlake and Jordao) If we improve the animal health in Mozambique we are bettering agricultural productivity, household income and food availability. Livestock productivity in Mozambique is low due to the multitude of diseases and lack of proper nutrition for the animals; therefore if we enhance animal health we can increase agricultural productivity. When livestock productivity is increased then the owners will have healthier animals to sell when crop production is low and they need to find food for their family. In Mozambique livestock is considered a safety net for the people. Yes they do eat them, but they are more commonly used for their milk, and to be sold when they need the money to buy food. When the household income is increased then the food availability increases as well because then they have the money to buy the food they need from higher producers, or have a healthy animal to eat. There are a massive amount of factors

that could help crop production, but they would take large amounts of work effort and money to improve. Whereas starting with animal agriculture is a small enough task to change that will make monumental differences and the domino effect will continue until the people of Mozambique are food secure.

Livestock is a key role in the lives of many rural Mozambique families, and just as they do in the United States, they get sick in Mozambique, possibly even worse. When livestock come down with illnesses they become sick and eventually die. When and if they become sick they can pose a harmful threat to humans, and their own wellbeing. On top of the overlaying threat of illness, livestock owners cannot sell their livestock if they are sick and of course if they cannot sell them if they are dead. So when livestock come down with illnesses then they do not make families money and the families cannot purchase food in the instance of a dry spell or over abundance amount of rain which is extremely common, and families cannot eat.

The present status of the animal health factor in Mozambique is that researchers and scientists are taking steps to develop vaccines and get them to villages but the task is easier said than done. (IFAD) Diseases such as Foot and Mouth Disease, Newcastle Disease, African swine fever, ticks and tick-borne diseases and trypanosomiasis are the major diseases that are affecting the livestock of Mozambique and the ones that need to be targeted. (UK Aid and BBSRC) (Tomo) As stated before, the task at hand is not an easy one. The situation is severe because smallholder rural farms and families that produce food for their own consumption and own livestock as a security do not have ways of paying for or obtaining vaccines to prevent the spread of these diseases in their livestock, nor are these families trained in giving vaccinations. (Timberlake and Jordao) Rural people in developing countries are at a painstaking disadvantage because they themselves cannot obtain nor administer the vaccines necessary to protect themselves and their livestock. There are many other methods that could also be implemented to improve animal health. Some of these include things as simple as controlling insects that serve as hosts for the diseases impacting the livestock. Simple precautions such as cleaning up manure close to homes or where the animals mainly reside is a great way to reduce disease, another one includes just trying to eliminate standing water around homes and animals. These types of locations and situations are where insects and bacteria grow and thrive, so if we are trying to eliminate disease we should surely cover these areas. Surely improved health and nutrition would help with increasing animal health. It is not just giving vaccines to animals, because if the animal is not even healthy enough then that vaccine will be pointless and not work properly. Simply improving the livestock nutrition could considerably impact the animals and allow the vaccines to properly do their jobs. Better breeds and more variation in the livestock are not necessary as a primary step to increasing animal health at this moment. For our first action steps and plans we need to focus on the breeds we have on hand and then work from there on introducing new breeds and variations. Also this situation has degraded the environment because now the environment and its inhabitants are being endangered by these diseases, and it has to stop. The key to improving animal health is through vaccines that are made more effective by improved animal health and nutrition as well as improved living conditions by controlling the situations in which these disease and carriers thrive.

The trends for this factor in Mozambique are rapidly worsening. People in Mozambique are having less and less livestock due to not being able to replace them when they become sick and die. Also milk production is down because of the illnesses the animals contract. (UK Aid and BBSRC) Trends are measured by how many animals that the people own and their production levels, as well as number of

sick animals are in a location as well as number of sick people around them. The measurements show that the situation is worsening because ownership levels are low as well as production levels. (Timberlake and Jordao) Ultimately the trends for my rural farm in Mozambique are worsening.

Improving animal healths of livestock in Mozambique will in the end increase food security and income because they can sell their healthy animals for grains and crops during food shortages and have nutritional byproducts such as milk and of course have meat. Having healthy animals will preserve environment stability because the animals will be less likely to contract disease and lead to healthy environment. With healthy animals that mean that people can make more money from their animals and then be able to supply food for their families. Smallholder farmers will have more stability and security knowing that they can count on their healthy animals to help them through times of hardships, not dig them deeper into trouble.

My factor of increasing animal health would help people in Mozambique to cope with other major issues. For example if we are met with population growth then the healthy animals can support the growing population. If we face urbanization the rural farmers can produce healthier, more efficient animals to feed those in urban communities. So in decades ahead the well-being of the families and communities in Mozambique will be so much better if we improve animal health and will be ready to face any changes in the years to come.

Based on my research, in order to effectively address animal health and improve food security of rural families in Mozambique, some drastic steps must be taken. We need trained professionals to travel to Mozambique and to give vaccines, preferably multi-strain ones, to the livestock in villages. It is estimated that we will need at least twenty veterinarians as well as other trained members to properly reach a sufficient amount of people in rural Mozambique. Infrastructure such as proper roads is necessary to be able to effectively and efficiently reach the farmers and rural citizens whom need to be educated and the livestock that need to be treated. We will also need some method of refrigeration to keep the vaccines in proper working condition. The Millennium Developmental Goals that we need to really solve this problem are to eradicate extreme poverty and hunger, combat HIV/AIDS, malaria, and other diseases, and to develop a global partnership for development. (MDG Monitor) In order to solve this problem we need to implement vaccine technologies in Mozambique and teach the people of Mozambique the importance of using vaccines with their livestock to solve this by 2015. It would be beneficial for everyone to start educating those rural children who we know are going to one day have to farm their own food for their families. Right now we need to fix the present situation, but more importantly focus on the future, so offering farming and animal health education to younger members of communities would be highly beneficial. It would also be helpful to encourage and reach out to adult farmers, but we should focus on the next generation. The key to solving this problem is to teach, to teach the people how and why they need to give their livestock vaccines and the good it is doing for them and their families.

The Mozambique Family Sector Livestock Development Programme (FSLDP) is a wonderful project that should be scaled up successfully and really make a difference. (IFAD) This project has exceptional goals, such as to establish an Epidemiological Data Collection and Management Unit...which will perform studies of rabies, Newcastle Disease, foot and mouth disease, brucellosis, and tuberculosis and provide vaccines, chemicals, sprays, and drugs for disease control as well as to support the free vaccination

programme for the control of anthrax, blackquarter and foot and mouth disease, and to even support the Newcastle Disease vaccination development programme through the provision of training, equipment, an egg-production flock and embryonated eggs. (IFAD) In relation to the education of the people of Mozambique the programme also has plans to support training and the provision of technical advice on local disease control and eradication techniques and to enhance the veterinary inspection of animals and animal products for human consumption. (IFAD) This project could be the one thing that could turn Mozambique around.

My suggestions include that communities need to work together and spread the word of importance of using vaccines to protect their animals. The national government also needs to make implementations of using vaccines a good decision and help their people get a hold of vaccines. This includes a sufficient amount of funding being provided to the people to purchase vaccines as these actions are just beginning. Corporations and other organizations need to start focusing on supply free vaccines for families in smallholder rural communities because these are the real areas of poverty in Mozambique. This may mean urban corporations and other organizations may need to tax or charge more for meat, animal byproducts, or crops so that the excess money be put back into improving where their food source actually comes from. Rural farms are key players because they need to want to learn about implementing vaccines with their livestock and actually cooperate in getting their animals vaccinated. It needs to be highly stressed to the rural farmers that these people coming into the country is a very good thing that will help them.

In conclusion food security in Mozambique is an issue of utmost importance that needs to be dealt with. This issue can be on the road to being solved if we improve animal health. When animal health is improved more security will be amongst the rural families of Mozambique, and then one by one the people of Mozambique will know when their next meal will come. If animal health is bettered in Mozambique than in the years to come the people of Mozambique will be able to deal with other tough situations as well. So now we are standing in a road with numerous turns to make, but if we turn at the one that improves animal health then it will lead us to a thriving southeastern African country called Mozambique.

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