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Tanzania, Factor 20: Farm to Market

Tanzania: Roads to Nowhere

Tanzania is on the eastern part of Africa. To the east is the Indian Ocean. To the north are Uganda and Kenya; to the west, Burundi, Rwanda, and Congo; and to the south, Mozambique, Zambia, and Malawi. Its area is 342,100 sq. miles, which is about three times that of New Mexico. Tanzania contains three of Africa's best-known lakes—Victoria in the north, Tanganyika in the west, and Nyasa in the south. Mount Kilimanjaro is the highest point on the continent. Standing at 19,340 ft. (5,895 m), it is a major tourist attraction, mainly to the extreme hikers. The island of Zanzibar is separated from the mainland by a 22-mile channel. Currently the country is a Republic government. However, there is a big political debate in which the people want to switch to a Democracy. As of a 2012 census, there are 46,912,768 people, and it has a growth rate of 2.85% per year. Many of the inhabitants of Tanzania are involved in agriculture and live in a rural community. One of the greatest problems in Tanzania is their road system. They have one of the most underdeveloped roads in the world, and the conditions of the ones that do exist are terrible. Many contributors affect this problem. Some include the weather and lack of funding. The people of America helped out as much as they could because many knew about it, but for some reason donations to this cause ceased and it hasn't come back up since. Fixing this predicament could be as easy as just getting more people to know of this issue or it could be as complex as actually starting your own organization and getting hands on work done.

A typical family in Tanzania consists of two parents and an average of five children. Eighty percent of men and 84% of women are employed in agriculture. In the rural, agricultural homes, 46% of the people are under the age of 14. Additionally, 25% are between the ages of 15 and 29. This has caused the average age for the country to be 17 years of age. The average income of the Tanzanian people is only \$700 per year, which is less than \$2 per day. Tanzania provides free primary school, but only 5-7% of those students attend a secondary school afterwards because they cannot afford the tuition. Even fewer students are able to attend a college after their secondary school. Some of the most common foods of the Tanzanians are ugali, rice, vegetables, and beans. Ugali is a porridge made of maize flour mixed with water to form a dough-like substance. Beef, fish, chicken, eggs, and tropical fruits are also served. However, they are not served regularly enough to provide sufficient nutrition for the Tanzanian population.

Most of the farms in Tanzania will vary from less than 1 to 3 hectares (1.24 to 7.41 acres). They also vary between regions. Farms in the southern part, like Ruvuma, average to be 2.64 hectares while in the northern part, for example Kilimanjaro, farm sizes average 1.06 hectares. This is partly due to the high population density in the northern areas. This makes it harder to come by large portions of land and makes it more expensive. Another factor that plays into the variation of farm size is the gender of the owner. According to a research paper done by three professors at the University of Washington, "Men are more likely to have farms greater than one hectare while women are more likely to farm parcels less than 0.3 hectares." (Derksen-Schrock, Anderson, Gugerty; washington.edu). This statistic shows that in Tanzania there is a large gender barrier. It is very similar in the U.S. Here, the average farm size for a male is 183 hectares while a farm being operated by a female is 85 hectares. The government in Tanzania also owns a large portion of the country's farmland. They own 16% of the total land farmed in Tanzania, when less than 5% of all the land is arable, which takes a huge chunk in the farming industry.

The most common food crops in Tanzania are maize, cassava, sweet potatoes, and bananas. Between those four, they make up 82.3% of all food crops grown in Tanzania. Maize is an extremely close relative to corn. Many people, especially in the U.S., say corn instead of maize because it is easier. However maize is more of a grass-based product that yields smaller cobs than the corn we grow in the U.S. Cassava, also called manioc, yucca, and mogo, is a woody shrub that is from the spurge family and is native to South America. It is cultivated extensively in tropical and subtropical areas for its edible roots. Sweet potatoes accommodate for 16.75% of the food crops in Tanzania. They are primarily grown for its tuberous root. However, people also use the leaves for brewing to add more flavor. Bananas are fruits that grow from a variety of flowering trees. There are four different types of bananas and each have their respective colors. Tanzania ranks 10th in the world for banana production. Three percent of all banana export comes from Tanzania.

There are four cash crops that yield 83% of all cash crops in Tanzania; tea, cotton, cashew, and sugar. There are two major varieties of the tea plant; Chinese and Assam tea. Chinese tea is native to, respectively, China. It was first used in a drink around 3,000 years ago in South China. Between the two, Chinese tea is more widely used throughout the world. Assam tea is native to North India and was first discovered from the odd odor emitted from rhinoceros feces around 1,000 years ago. Cotton is the primary natural fiber used by people all around the world. Cultivated cotton is also a major oilseed crop, as well as a main protein source for animal feed. Cottonseed meal can contain up to 50% protein when the hull is taken off. This is beneficial because the higher the protein concentration the less weight the feed takes up while giving the same amount of protein. All the extra weight will become fat instead of muscle and cause the animal to be worth less and give a lower carcass weight. World production of cottonseed meal was about 14.7 million tons in 2009. (FAOSTAT, 2014) When on the tree, it is encased in a toxic shell. This must be removed before sold to be eaten. The cashew apple, also called cashew fruit, is the fleshy part of the cashew fruit that is attached to the cashew nut. The top end of the cashew apple is attached to the stem that comes off the tree. The bottom end of the cashew apple attaches to the cashew nut, which is encased in a shell.

There are many contributions that prohibit the agricultural industry to flourish. Climate volatility, availability and knowledge of genetically modified organisms (GMOs), and lack of road structure are all major parts that hinder the agricultural community in Tanzania to thrive and survive.

Climate volatility is connected to the poor harvests in Tanzania. A World Bank study on climate volatility in Tanzania, Ahmed et al. (2009) found that “corn had a 12% yield loss per degree Celsius, rice showed a 17% yield loss, and sorghum a 7% yield loss over a six-month growing season.” This has caused the farmers of Tanzania to sell all of their crops even the ones they wanted to keep as a food source because they need to have a certain amount of profit for the year. It’s kind of like balancing a bank account. The only difference is that you are trying to stay at a neutral balance of zero dollars and any extra you keep for yourself. You have expenses throughout the month and when your paycheck comes in you need a certain amount of money in order to have a positive balance. The only problem for the farmers is that when that “paycheck” (that year’s harvest) comes in, it doesn’t make up for the expenses that they had so they have to sell it all and have none left over so their families can eat.

The biggest problem that Tanzanian agriculture faces is their road structure. Transportation of factor 20 (Farm to Market) is a big concern in not only Tanzania, but other countries as well. One part of transportation is the roadways. Roads are few and far between in the harsh lands of Tanzania. There are only 91,049 km of roadways and only 6,578 km are paved (7.22%). Meanwhile the United States’ roads total 6,406,504 km with 4,192,874 km paved (65.45%). The

huge contrast between these two countries has attracted a lot of attention throughout the world. A group of professors at the Oxford University in England coincided to create a book that discusses the poor driving conditions of some countries. “Many of the poor are currently passive participants, often obliged to sell low (immediately after harvest) and buy high, with little choice of where they conduct transactions, with whom, and at what price. This is caused from poorly maintained roads and scarcity of roads.” (*Rural Poverty Report 2001* 162).

The reason this problem currently affects so many in Tanzania is because having adequate transportation is a priority, not a privilege anymore. Many farms are miles away from the markets and if you don't have car that can deal with the unforgiving terrain that the roads offer then you can't get to the markets at all. If you can't make it to the markets, then you can't sell your crops, and if you can't sell your crops, you won't make any money. They need money to get a new truck, but they can't get the money without the truck. This is an endless cycle that has caused a large portion of small farmers to go deeper and deeper into poverty.

Currently, the conditions of the roadways are extremely poor. Most of the roads are never maintained. This has caused rainfall and flash floods to wipe away large portions of the road and makes an almost impassable route. In the central and northern parts of the country, they wind around the hills, valleys, and mountains. Some of these roads don't exist anymore because landslides wipe them out. The worst road in the country is near Mt. Kilimanjaro. This 19,000-foot mountain can destroy roads from two miles away. Its three volcanic cones Kibo, Mawenzi, and Shira have laid many layers of cooled lava on top. In some parts, there are five-foot drifts of it blocking the path. Also, landslides and rockslides have mangled the mountainside and produced a cliff around the roads. Many drivers have fallen to their death because they weren't careful enough and drove off the road.

In the early 21st century, people of America started to pay attention to this problem and raised money to help. There are trends that show large involvement in the mid-2000s. In 2006 there were eight public and three private foundations dedicated to the production and improvement of roads in Tanzania. During that time, conditions rose for the Tanzanian roadways. However after the stock market crash of 2008, there was a severe drop in these funds. Many Americans had to make enough money for themselves before they started to worry about other people. Since then, people forgot about this situation and stopped raising money. As a result, the conditions of the roads dropped again and haven't come back up. Without any help this problem will keep getting worse, and more farmers of Tanzania will fight poverty again.

If Tanzania had a structure of roads like America, their poverty rates (especially in rural areas) would be extremely lower. This predicament can end within the next ten years and if it does then the small farmers will be able to make more money. This is because the roads will be taken care of and even a small car will be able to haul the crops they need to sell. This will be economically beneficial for them because they can afford a car that will be able to get them to and from the markets.

There are a few underlying factors that affect the roads in Tanzania. The first is the climate. To be more specific, climate volatility. The climate in Tanzania can be a little dubious at times (much like Iowa), but lately the weather has been extremely erratic. “Weather patterns across Africa are becoming increasingly unpredictable, probably due to global warming; we're seeing downpours in the middle of deserts and damaging droughts when rains should be falling.” (expertafrica.com) The areas that are getting excessive amounts of rain and aren't used to that kind of weather have roads, trails, and other modes of transportation that are being washed away. Erosion caused by rainfall is approximately 10-40 times faster than natural erosion. This extremely rapid erosion is

causing large craters and streambeds to form in and across the roads. The other areas that are a concern are the ones that normally have had very wet seasons now have droughts. This newly distinguished diversity has caused the ground to harden and form large cracks. These cracks make the ground much more liable to formation of crevices and, if on a mountainside, entire portions tumbling down in a rockslide.

Another factor is the inability to fund the repair and construction of roads in Tanzania. The gross national income for Tanzania was only 27.5 billion dollars in 2012. The gross national income is defined as follows “Gross national income, abbreviated as GNI, is the sum of incomes of residents of an economy in a given period. It is equal to GDP minus primary income payable by resident units to non-resident units, plus primary income receivable from the rest of the world.” (epp.eurostat.ec.europa.eu). The GNI divided by the midyear population equals the GNI per capita. This equates to only 570 dollars of income per capita. Let me get a little out of character for a little bit. What can you do with 570 dollars? The answer is not much especially when the focus of this is the transportation and buying an off-road vehicle helps. But that is only a down payment. What are they going to do to pay for the rest of the car? Okay now I’m back. If compared to most of the other countries in the world, Tanzania is very close to the bottom when ranking the GNI to the world. Even Ethiopia, a very commonly known country that lacks nutrition, had a GNI of 35 billion in 2012. That’s 7.5 billion higher than Tanzania. The lack of resources has caused the ability to repair and construct roads non-existent when funded by their own government. When making a new road, there are many contributors that cost money. Labor, materials, equipment, and fuel are a few of those. Adding all of those into consideration even their own government cannot fund this for all of the roads in the country. So in order to get roads repaired or created, the funding has to come from another source if this problem has a chance to be resolved.

There are a few options when trying to find a way to put an end to this problem in Tanzania. The first is getting people to recognize this situation and its extremity. If the amount of people that donated money to charities to help this cause in 2006 was put to use today, the problem could end in the next ten to twenty years. Many people have recovered from the 2008 stock market crash, so they should be able to do the same that they did before and help fund projects that help fix the roads in Tanzania. One way that could get people to know of this would be to advertise. This could include advertising a foundation in the newspaper, on TV, or on social media sites. Excluded from Google, Facebook was the number one most visited site in the U.S. Twitter was also in the top five (4th). Implementing an advertisement that included one or both of these sites would be very effective in showing others about this problem. Advertising also doesn’t have to be predominantly in America too. Reaching out to an international level would be monumentally beneficial to this cause because not only are people from the U.S. helping but also the population of other countries.

Another solution to this problem is also a more of a hands-on one. This would be starting an organization that takes donations from others and actually builds the roads themselves. This would help because the ones donating would have assurance that the money they are contributing would go to the cause that they are doing so for. This also cuts out the middleman, which makes the job cheaper and money do more. Starting an organization is also the hardest because you have to find someone to do everything in order for it to work. A group of individuals that are into road construction and have the equipment is a priority. Without them, the entire project would be a failure because no one would have experience in that field and it wouldn’t get done. Another job to fill would be a secretary or organizational expert. This would be very helpful because when so many sources are donating and so many expenses are going out, it’s hard to keep track of everything. There are other various functions that others are needed for. Some examples are

sponsors or agents that help with advertising. Filling all of these jobs may seem like a lot of hard work. However, this creates more job opportunities for the people in Tanzania. Having more job opportunities causes the people to earn more money and raises the income of the country, causing the poverty level to drop dramatically.

Tanzania has one of the worst road systems in the world. Roads are scarcely found here and when you do find one, they are almost impassible. There are many contributors affect this problem. Climate volatility makes the roads treacherous because the intense heat dries the dirt then, within a blink of an eye, a monsoon hits and washes away most of the road. The inadequate maintenance of the roads leaves them at the mercy of the climate and is more susceptible to natural destruction. Internationally this is not yet seen as a major problem. This has left Tanzania to fend for themselves with no help from other countries. There are a number of ways to end the situation farmers in Tanzania are left in. One of which is as easy as advertising fro foundations that collect funding for the roads and infrastructure in developing countries such as Tanzania. Another is actually starting your own charity fund that goes directly to hiring people to make paved roads in Tanzania alone. Feeding the world cannot be done in just one easy step it takes many people to work together with dedication and passion to ending poverty, famine, and hunger throughout the world. In the words of the man who is credited to saving over a billion lives, "I am but one member of a vast team made up of many organizations, officials, thousands of scientists, and millions of farmers - mostly small and humble - who for many years have been fighting a quiet, oftentimes losing war on the food production front." -Norman Borlaug

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