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Tanzania: Challenges and Opportunities for the Small Farmers

We all live in the 21st Century, a time of advancement. We can talk to someone on the other side of the world at the tap of a finger, or fly there within a day. Clean, running water and flushing toilets are things we don't even think about, because they're just part of life, but they're not luxuries everyone gets to enjoy. In countries like Tanzania, just getting enough to eat is a daily struggle for most. They work long and hard in fields that can barely support plant growth for little pay. We all breathe the same air and walk the same way. So what's the separation between us and them? The answer is education. In order for Tanzania to be able to move forward in improving their economy and specifically improving their agriculture the need to start educating their farmers on sustainable agriculture practices. They especially need to but an emphasis on the youth since they will be the ones carrying on the legacy.

The United Republic of Tanzania is a medium-sized country about twice the size of California. It is 365,755 square miles and is the 31st largest country in the world. Tanzania is located on the eastern side of the continent of Africa and is surrounded by the Indian Ocean, Kenya, the Democratic Republic of Congo and Mozambique (Central Intelligence Agency).

This country was formed in 1964, from the unification of the mainland, Tanganyika, to the island of Zanzibar. The unification of these two countries was called the Act of Union. At one time, Tanzania was a very wealthy country that traded with Arabia and Persia. During the 18th century, the island of Zanzibar was the center of the Arab slave trade (Embassy of the United Republic of Tanzania).

In 1890, Zanzibar became a British protectorate during the reign of imperialism. The mainland of Tanganyika (present day mainland Tanzania) was under German rule until after World War I; then, it became part of the League of Nations and was given to Britain to control (Embassy of the United Republic of Tanzania). After the country was formed in 1964, it had an elected government that was more of a socialist regime. With its history of being a major trade route under control of Germany and Britain, it now has around 120 different ethnic groups. Many of these groups control villages throughout the country. Most recently, this country has been a major hub for refugees from Rwanda, Burundi, and Uganda, which has put some additional strain on the economy of Tanzania (Carlson).

Following Tanzania's independence, national laws have made it so the state owns the land and the people lease the land from the state. The government's oversight of the leases is very weak. Because of this, many ethnic groups or tribes that ignore government rules and feel they still own the land. Tribes use their power unfairly to distribute and even evict people from that the land the people legally lease. This lack of government control also makes it virtually impossible for the women to lease or work the land due to cultural views of how women are treated and respected (Embassy of the United Republic of Tanzania). According to the Tanzanian Embassy's website, "Land is an economic good of increasing value. It plays a great role in the process of poverty reduction through wealth creation and hence uplifting the well-being of the people."

Tanzania currently has a population of 48 million people and 80% of the population is considered to be living in poverty. Currently, 92.5% of the population is dependent on others to meet their basic needs and 74.3% of the population lives in rural areas (Central Intelligence Agency). Of the Tanzanians who live in

rural areas, 85% of them rely on agriculture for their income. Tanzanian agriculture creates about half of the nation's income and three quarters of its exports. Agriculture also accounts for 85% of the GDP of the country (Central Intelligence Agency).

Barriers to employment at a living wage are a prominent issue. Tanzania has one of the world's poorest economies per capita. Their money has very little value to other countries. One US Dollar is the equivalent to 1,625 Tanzanian shillings (Central Intelligence Agency). The average agricultural worker earns 512.85 Tanzanian shillings an hour which is the equivalent to \$0.32 cents ("Minimum Wages in Tanzania with Effect from 01-07-2013 to 30-06-2016"). This wage isn't enough to survive on, and because of this, transportation for people living in rural areas is virtually non-existent. People can't get to market places and use any money because it is difficult to reach food markets. The infrastructure lacks good roads and transportation services. Rural Tanzanians heavily rely on trading goods with each other to get the things they need. Most farmers of small farms depend on their own crops for food. The youth in Tanzania face an unemployment rate of 17% (Rutta).

The cornerstone to Tanzanian society is "vjama" or family in Swahili. There are over 120 tribes living in Tanzania and most people don't wander outside of their tribe group. Each of these tribes speak a different language, but Swahili is known by most everyone, so communication between the groups is possible.

Approximately 25% of households are polygamist (mostly within the Muslim community), many marriages are arranged (Lawson). On average, Tanzanian women have their first birth at age 19.6 years of age and on average have five children. Both of these statistics are due to availability of birth control and low life expectancy. Childbirth death rates are alarmingly high (Central Intelligence Agency). According to the WHO, 38% of the population lives in rural poverty. Less than 50% of women get skilled medical help during delivery (World Health Organization). The man is considered the "supreme" head of house and makes all decisions. Women do not earn respect through their accomplishments, but are considered mature when she can bare a healthy child. Women in Tanzania have no real identity; they are recognized by the name of her oldest child (Lawson).

The current health care system is supported by the Ministry of Health. Their health care system is organized in a referral pyramid starting at the village level, then ward, district, and finally region. Access to health care is near non-existent for the rural population, but it is in high demand. There are 0.01 doctors for every thousand people and 0.7 hospital bed per thousand.

There is 5.6% of the population living HIV Positive. In 2009, there were roughly 86,000 deaths that were HIV related (Central Intelligence Agency). Among men and women living in Africa 37% of women and 27% of men were tested for HIV and got their results. Even though HIV is a known ailment only 53.3% of men reported that they used a condom last time they had high risk intercourse (World Health Organization).

On the mainland of Tanzania, malaria is rampant. Malaria is the leading cause of death for children under five on the mainland. The island of Zanzibar has reduced its malaria deaths down to 0.8% with the use of insect nets (World Health Organization).

Other health challenges are parasites, intestinal ailments, nutritional deficiency, venereal diseases, and respiratory illness. The number of children considered underweight is at 5.6% (World Health Organization).

Food availability and food safety is a leading problem in Tanzania. Currently, 47% of the population has

unimproved or non-piped water, causing water for many to be unsafe (Central Intelligence Agency). Most rural farmers grow their own food and report facing moderate to severe hunger due to unpredictable crops and livestock failure (Lawson). A typical farm size is one to three hector- acres in size. The export crops grown are sugar, coffee, cotton, tobacco and tea. The main crops are maize, cassava, rice, sorghum and millet (Derkson-Schrock).

The diet of the people that live along the coastline consists of mostly fish. The inlanders diets consist of mostly cooked or steamed green bananas, maize (corn) with a bean or meat relish. A traditional African diet is milk-based, but because of disease, milk is hard to come by in Tanzania (Embassy of the United Republic of Tanzania).

Typical Tanzanian farmers use some sort of chemical to help their crops grow. Many farmers use pesticides, 59% of these farmers use insecticides, 29% use fungicide, 10% use herbicides, and 2% use rodenticides. These chemicals are meant to help farmers have greater yields, but when these chemicals are used incorrectly, they can be very harmful to people and the environment (Ngowi).

Many farmers have instructions on how to use these chemicals, but they are illiterate, thus making instructions useless. 68% of farmers reported become sick after application of crop chemicals. Skin ailments and neurological damage are the most common illnesses that come from misuse of pesticides. There are numerous other undesirable side effects of improper and overuse of pesticides such as human toxicity, the destruction of natural entities and other non-target organisms, and water pollution (Ngowi).

There are many challenges and opportunities to improve the conditions of farmers in being able to producing safer and better crops. Some of these challenges include the climate of Tanzania, chemical usage, irrigation systems, soil management and lack of education.

The climate of Tanzania is typically tropical and it tends to be cooler in the northern highlands. The rainy seasoning goes from mid-March to May for the long rains and October to December for the short rains. Rainfall uncertainty sometimes causes droughts and is a common problem in some areas (Tanzanian Travel Guide). Extremely dry land and sparse, intense rain ruins the soil for the growing crops (Derkson-Schrock).

Tanzanian irrigation practices are primitive heavily relying on run of the river water abstractions and gravity. Farmers' inability to purchase better irrigation equipment and water storage facilities contributes to the growing problem (Tanzania Agriculture and Food Safety Investment Plan).

Soil degradation through soil erosion, chemical deterioration and physical deterioration are also challenges for sustainable agriculture in Tanzania. Erosion is a barrier to improving agricultural activity. There are different causes of erosion: water, wind, chemical, and physical. Water erosion is caused by intense rainfall and runoff water. "Chemical deterioration involves loss of nutrients or organic matter by salinization, acidification, soil pollution and fertility decline" ("An Introduction to Soil Degradation"). The loss of essential soil nutrients are the building blocks of acidification. Soil toxicity is the most minor of the types of erosion, but it is on the incline ("An Introduction to Soil Degradation"). Soil toxicity can come from numerous sources such as industrial waste, oil spills, excessive use of fertilizer, herbicides and insecticides, and finally, the release of radioactive material by airborne pollutants ("An Introduction to Soil Degradation"). Physical deterioration of the soil also isn't one of the greatest causes of crop failure in Tanzania ("An Introduction to Soil Degradation").

The education system in Tanzania starts with early schooling and is compulsory from 7 to 15 years of

age. Primary school is free, but uniforms, testing, and school supplies have to be provided by the parents. As of 2006, both boys and girls had a 97.8% attendance rate for primary school. The core language taught is Swahili. A child in Tanzania on average will complete 9 years of schooling. At the end of primary school, each child must take the National Standard 7 Examination to get their primary school certificate (Central Intelligence Agency.)

To advance onto secondary school they must earn their primary school certificate to be considered for selection in public secondary school. Only 49% of children that earned their primary school certificate and of those 89.9% of students are selected for secondary school. Secondary school starts from the equivalent of 9th grade, and it is optional for children. Secondary school must be paid for by the parents, because of this many families are unable to afford schooling. The cost of secondary school causes very few parents to send their children on for more schooling. Only 7.7% of children go to a secondary school. The average class size is between 45-55 students per teacher ("Fact Sheet: Education in Tanzania"). Only 6.2% of the country's GDP goes towards education. The literacy rate for people 15 years and over show that 60% of girls are literate and 75% of boys literate, either in Swahili, English, or Arabic (Central Intelligence Agency).

There was a study done by David Ngugi showing, "Deficiencies in agriculture educations during the period under review (1990-98) have contributed to the poor stat of food security in Tanzania (sic)". Tanzania has a high illiteracy rate and there is no real education system in place to teach the farmers how to farm their land properly (Ngugi). Many of these people have never even heard of sustainable agriculture much less know how to sustainably farm. Due to the lack of infrastructure with the road systems it make it difficult for farm extension services to get out to the farmers to help educate them on best practices for farming.

There was an initiative during the 1970's by the Ministry of Agriculture and Vocational training to include agriculture education as part of the core curriculum in primary and secondary schools. "Findings from various studies and general observation indicate that knowledge in primary schools did not make them better farmers" (Rutta). The program was eventually dropped by the government and nothing more done to promote agriculture education with the youth.

There is currently a stigma attached to being a farmer in Tanzania. There was a study done to understand the youth's point of view concerning farming. This is important because most youth are employed in subsistence agriculture. They are learning how to farm based on experience and knowledge of their friend and relatives who are also uneducated in the best farming methods. "Many young people see farming as work for poor people and a career for people with no education or skills" (Rutta). Another turn off for young people going into agriculture is the uncertainty of losing crops and poor performance.

To help educate the farmers the Ministry of Agriculture Food Security and Co-Op (MAFC) provide demand driven short and long courses to farmers. However, "they operate under budget deficits with no modern training facilities and too few trained staff" (Rutta).

The Tanzanian government has recognized these challenges and so under the direction of the MAFC they started a new initiative to make an "agriculture revolution" campaign called Kimo Kwanza. This program is meant to specifically target the youth and get them excited about agriculture and want to pursue a career in agriculture. The idea is great but the challenge again is getting the information to the people. The information for this program currently can only be found in government offices.

So how to you get this information out to the rural areas? There is a program called the Tanzanian Vision 2025 and it focuses on the need to use Information Communication Technologies (ICT) to get educational

information out to the people (Swarts). The program is focusing on the use of cell phones. “The mobile financing service that is widely used by young people was cited as a model and youth would want this kind of a service applied in agriculture” (Rutta). Cell phone can be used in agriculture education because the information can get out to most of the rural areas where it is needed. “The cell phone industry on the African continent is one of the fastest growing in the world. Villagers can use the cell phone to find out what market to take their produce, and in South Africa phones are being used to educate children” (Czaerniewicz). The cell phone can provide a bridge for people with limited access to information.

Why cell phones and not computers? Cell phones are cheaper than other options. “In Africa mobile internet is among the least expensive in the world and desktop access is still the most expensive” (Czaerniewicz). 3G cellular service is gaining in popularity with increased affordability, unlike optic cable network needed for computer internet service.

Currently, most phones are being bought by the people. However, many of the farmers and youth cannot afford to purchase a cell phone. There are some organizations that are helping to give phones to the poor people in Africa. Two of the largest are the Rotary Clubs and Barclay Banks. The Ministry of Education and Vocational Training (MoEVT) has also been training people for technical support and networking.

As of 2009, 46% of the population had mobile access and it will continue to grow (Van Genuchten). There are three major carriers in Africa being Tigo, Zantel, Vodacom and Airtel. All of these companies sell Blackberry, Nokia and Samsung phones that we use in the United States. “With only 18.4% of the country’s population having access to electricity as of 2012” (Msyani) how are people going to charge their phones? There is a solution, and that is a solar powered chargers. They are currently being made by a couple companies and are reasonably priced and are in use throughout Africa.

We can take this initiative one step further and start a program where people in first world countries could donate their cell phone that still works to places like Tanzania. We could do this through our own Rotary Clubs or some international organizations. There are thousands of cell phones that work fine they are just “old” or not the latest version. It would not require much capital to get the phones working over there and just think of how much potential that donation could make in the lives of the struggling small farmers in Tanzania including the generations to come. These phones could be used to give educate the farmers. This is a big issue that is holding them back. Then they could use the information to improve their farming techniques and become more profitable in turn making their lives better. The phones can also make the youth more engaged in farming and want to possibly make that a lifelong commitment. That is priceless!

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