

“National Responses to Food Insecurity”

Johnna Decker, Student Participant

Cascade High School

Growing up on a family dairy farm has taught me that there will always be a struggle in crop production. Every day is unpredictable; however, you must continue in order to succeed. Even though you do not know what will happen with the risks you take, at the end of the day you can only hope you made the right decisions. The people of Botswana also carry the unpredictability of everyday farming life. Many families in the country of Botswana earn their living from subsistence farming. This means that they grow enough food products to support their families and whatever surplus amount they have left they sell to market for money. Subsistence farmers make up a great deal of Botswana's population. Small farmers have access to ownership of their own land. They pay property taxes on their land, and yet they still come up short. The main problem subsistence farmers face in Botswana is the insufficient amount of water supply in the country causing lower crop yields. In southern Africa, the Kalahari Desert can be blamed for the reduced amount of water in Botswana. This causes the country to import many different types of crops and produce for inhabitants to survive; therefore, the country spends more money on imports than what it makes on exports out of the country. In order for a country like Botswana to thrive in globalization, there are four basic thresholds necessary to sustain economic growth. A country needs to maintain a sound government, have basic health and education, include core infrastructure, and have access to foreign markets in order to progress. Due to the discovery of diamonds in Botswana over the last decade, the money earned from the diamond industry has gone towards building strong infrastructure for the distribution of goods throughout the country. With agricultural productivity being a vital issue in Botswana, the country could look into alternative sources of water for crop production. For example, the salt water purification system would be an incredible way of getting ample amounts of water into the country from the Atlantic and/or Indian Oceans. This process would enable the country to have access to freshwater for the local farmers to grow healthy crops for their families and market consumption. Access to freshwater for citizens in Botswana will do nothing but benefit the country. Botswana, Africa faces many problems with its farm marketing infrastructure, institutions, and globalization; but it has been improving over the last several years.

Botswana's climate is semi-arid causing roughly two-thirds of this country to not be suitable for arable land. Plant life and vegetation are very limited as well. Because of these limitations, cattle raising is dominant in Botswana's agriculture; therefore, the land is being tainted due to overpopulation of cattle in certain areas such as eastern Botswana. Oversized herds of cattle and bush fires in dry areas tend to degrade some of Botswana's agricultural environment (Republic). Over one-half of Botswana's population lives in rural areas and is dependent on subsistence crop and livestock production for food. However, the agricultural industry in Botswana only contributes about 2.8% of the country's Gross Domestic Product (Country).

The size of most subsistence family farms in Botswana averages to about three children per family. All children are guaranteed ten years of basic education. Approximately half of the student population attends two years of secondary schooling. After secondary school, students can attend one of six technical colleges in the country, or take vocational training courses in teaching or nursing. The University of Botswana in Gaborone is where the most students attend for a college education. The student body population is over 14,000 students. The University offers courses in education, social science, science, and agriculture if families are able to afford college education. Most families in Botswana did not earn high amounts of income per year. The average amount of income per capita household in 2001 was \$1,375. Twenty-four percent of most earnings were spent on food, twelve percent spent on fuel, seven percent on education, and two percent on health care (Firm).

The main crops grown in Botswana include sorghum and maize; many fruits and vegetables such as potatoes, lettuce, carrots, watermelon and several other kinds of wild melons are grown in the country. The typical diet of a Botswanan consists of meat, with beef being the main meat consumed, chicken, fish, and goat meat. Along with meat; sorghum, maize, rice, and cereal are usually eaten. Many fruits and vegetables can be found in markets and are very common sources of food as well. Botswana also has several types of popular dishes they use for special occasions such as porridge, bread, and Chotlho, which is a meat based dish (Botswana Infrastructure).

The average land area of a subsistence farm in Botswana is nearly seven hectares; approximately 17.3 acres of farm land. Most subsistence farms are run the same in Botswana. Since the weather is generally so dry, farmers plow and cultivate their land during the rainy season which is from November to March. The rainy season, along with cloud cover, helps to cool the land, which makes it more suitable for farming conditions, though it is only for a short time frame. When the crops are harvested, Botswana Agricultural Marketing Board (BAMB) buys all produce from the local subsistence farmers. BAMB also makes sure that there are sufficient amounts of adequate supplies available for customers at affordable prices. Their main objective is to secure a stable market for consumers at an equitable rate, and ensure fair and efficient ways of distribution of produce, avoiding any unfair advantages to some parts of the country. BAMB purchases, distributes, and markets acting either as wholesaler or retailer; they are also able to import or export products as the need arises and arrange processing and sale of processed products (Financial).

Botswana faces many major barriers in improving farm agricultural productivity. Overgrazing due to the rapid expansion of the cattle population is a continuing threat to the vegetation and wildlife of Botswana. The national average herd size of cattle is between two to three million head causing more crops being eaten by the animals than grown in the country. Another barrier for Botswana's agriculture is the insufficient amount of water supply. A major factor in the country's water shortage is that sixty-eight percent of Botswana is covered by the Kalahari Desert. Botswana only has 2.9 cubic kilometers of renewable water and forty-six percent of the renewable water is used for agricultural purposes. The limited supply of water is not good for the country's increasing population. Throughout periodic droughts, the water shortage is more pronounced and people are not getting enough water. Botswana also faces a barrier with small subsistence family farms. The smaller family farms are not able to compete with the higher quality and lower priced imported crops as they face production and marketing problems. This forces the country to import eighty percent of the fruit and vegetable production. These problems have a negative affect on the farmers and local horticultural production and eventually hurt farm income. Botswana has fairly good access to its property rights and credit. It is currently ranked the second best country out of forty-six Sub-Saharan African countries to have freedom to property rights. Botswana also offers very strong protection of property rights making it that much easier for subsistence family farms to own property or credit for their land. Along with owning your own property in Botswana, it is required that you pay a property tax on it. The property tax rate for this country is about twenty-five percent. Property rights do not really affect the amount of income made per family in a negative way. If anything, it helps the small farmers of Botswana because they are better able to control what they choose to do with their land if it is secure to their name. The current situations with protection of property rights in Botswana are improving significantly today (Botswana).

Poor marketing infrastructure in Botswana hinders small subsistence farming families from earning the amount of income they could be receiving yearly. Botswana is able to import food and crops for less money than it takes for small subsistence farmers to grow enough for the country. Although Botswana's infrastructure has improved over the last decade due to the mining of diamonds, the farm marketing infrastructure still contains some glitches. High costs in transporting goods throughout the country make it harder for families to earn money from their crops. The high costs of fuel in Botswana also take a toll on the infrastructure. The cost of fuel in Botswana is higher than what most average

income families can afford, making it difficult for them to ship or transport their extra crops to earn money. Because of the inconvenience of high fuel prices, it is very hard for people to make enough money to support their families (Ruma).

Institutions in Botswana have strived to assist the country in making it a more suitable place for its inhabitants to live. Many institutions are available in Botswana for financial help to subsistence farmers and others as well. The Botswana Development Corporation (BDC) is an institute that helps people with their loan finances, equity participation, and receiving commercial land at marketable rates. BDC is a corporation designed to allow foreign or local investors to create and develop businesses that will provide sustainable employment for people in the country. Another important institution to Botswana is The Botswana Export Development and Investment Authority (BEDIA). BEDIA was established to promote investments on export industry, identify markets for products manufactured in the country, and to also construct factory buildings. Botswana has several institutions available for assistance to help people support their families (Financial).

Farm marketing infrastructure and institutions have been improving significantly over the past couple decades. Many institutions have been created for the sake of the country to succeed and improve in agriculture. Botswana has 603 miles of rail lines, 11,484 roads, and ninety-two airports; all of which aid in the distribution of food and crops throughout the country (Botswana Infrastructure). Situations for subsistence farmers are improving along with the farm marketing infrastructure and institutions. Because the factor is improving, there are more sources people can look to for business and financial help today. Farmers are better able to grow more crops for their families by owning their own property and they market their products easier with ways of transportation to and from larger cities of the country. The improvement of infrastructure is currently doing nothing but good for the people of the country. Botswana has been an improving country as a whole due to the progress that has been made in its infrastructure and institutions throughout previous years. The mining of diamonds has had an important impact on the improvement of infrastructure in the country. When Botswana gained its independence in 1966, only three miles of roads were available for transport in the country. Today, there are more than 4,000 miles of roads, making distribution of goods throughout the country much easier. Food and crops produced by local subsistence farmers are able to be sent all over the country for families in need. This benefits the small subsistence farmers in a way that allows them to market more crops from their farms and still produce enough food for their families to survive. Therefore, they are able to generate more income for their families by marketing any extra crops they may have. By improving infrastructure in Botswana, subsistence farmers will be better able to supply enough food and income for their families and the country will not be forced to import as many fruit and vegetable crops from other countries around the world.

Increased agricultural productivity by small-scale subsistence farmers could help secure property rights and the infrastructure in Botswana. If farmers produced more healthy crops on their farms, it would show that they are financially able to handle having their own land. By doing so, the government would look higher upon them and possibly give them more opportunities to own their own land. Growing more crops on their farms could help with the infrastructure as well. Because they are producing more crops, they will also have more crops to market. This will help out the infrastructure in Botswana because they will have to transport more goods throughout the country. Perhaps by doing so, some problems may come up such as not being able to get food to a certain area in the country; therefore, demanding changes in the infrastructure so they are better able to transport goods all over. The trade policies may improve amongst countries by having better infrastructure because goods can be transported further from country to country. Botswana has had close trading policies with South Africa for many years. Geographically it is smart for the two countries to trade goods back and forth (Country). Since food products are able to be sent to many different areas, this will open trading routes from countries worldwide.

Agricultural productivity in Botswana could improve food security and income for many families. It is incredibly essential for small subsistence farmers to have an ample amount of water supply to grow their own healthy crops for market as well as for their families. Irrigation systems have proven to be a good way to get water to fields to produce crops for market consumers. However, for Botswana, the water supply is crucial for the production of high-quality crops. A way to improve the amount of water in the country would be to utilize the Atlantic or Indian Oceans as a source of water for the growth of production. The government should consider investing in a salt water purification system to increase the amount of freshwater available for crops. If local farmer's crops were benefiting from the system, they could even pay back a certain percentage to pay for the usage of the salt water purification. By doing so, this may even improve inhabitant health throughout the country because having a cleaner, better, source of water is much healthier for citizens to consume. Having freshwater will increase crop yields in that they will be healthier plants for market consumption; therefore, increasing the amount of income and food for small subsistence farming families. Another benefit of having a salt water purification system is that farmers would be able to produce other fruits and vegetables that are essential for one's health such as, onions, radishes, pickles, or anything that will benefit from the freshwater supply and climate. The combination of these things will improve the nutrition and boost immune systems in humans surrounding the area. This may also help with Botswana's exporting economy. Other countries may find it to be beneficial to buy these crops if they are healthier and are greater in supply, thus, increasing the amount of money staying in Botswana. Salt water purification systems have the potential to be tremendously beneficial to the country.

Communities, national government, organizations, and companies play a huge role in Botswana's economy. Communities would benefit the country as a whole if they would buy their crops from local farmers instead of importing their food sources from other countries. As long as people are buying from the country's farmers, they will keep the money inside the country and will promote the growth of the economy. Communities could also help by providing insurance for crops if local farmers thought it would be beneficial to have in case a natural disaster struck the country. Farmers would still be able to earn an income for their families if something were to happen. The government of Botswana could assist by placing tariffs on imported goods that local subsistence farmers have the potential to provide for the country itself. The taxes on these products could go towards the country's expenses. Placing tariffs on imported goods will also force most inhabitants to buy from local farmers, preventing money from leaving the country and benefiting other countries. The high costs of fuel could affect the export economy of Botswana. This is when the government should look into alternative fuel sources such as Ethanol produced by corn, saving the country thousands of dollars in energy costs. Not only is the economy going to benefit from the alternate source of fuel, but this will also allow surrounding countries to benefit from the product as well. The use of freshwater will increase the yield for corn production; therefore, enabling the country to both grow more corn and also produce more Ethanol. This will create thousands of jobs throughout the country too. Another role government can play is to maintain property security for small subsistence farmers. As long as farmers continue to pay their property taxes, the government would be able to maintain their rights to their land allowing them to sustain healthy crops. The government, along with Botswana Export Development and Investment Authority (BEDIA) may assist in foreign markets as well. They could open more doors that would allow the country to export more goods to other countries while increasing the country's economy. World Bank would be another way to assist in financing the country of Botswana. They could assist the country's government in purchasing a salt water purification system that would benefit the growth of production throughout the country. World Bank could possibly loan money to Botswana's government to allow people to borrow money to have a better way of planting and producing high-quality crops for consumers. Small tractors and farming equipment would be great ways to facilitate crop production in Botswana. Subsistence farmers in Botswana have many opportunities to benefit themselves and their families in addition to their country.

Botswana is a country in southern Africa that has significantly improved in its farm marketing infrastructure and institutions over the past couple decades. The climate of Botswana is semi-arid causing farming to be difficult for local subsistence farming families. The dry weather conditions limit the crops for production because of the Kalahari Desert in southern Africa. One of the barriers of agricultural productivity is insufficient amount of water supply. The shortage of water in Botswana causes the country to import goods because smaller farms are unable to compete with the high-quality crops that other countries can produce. This causes problems with the country's economic growth because Botswana is spending more money on imported goods than the amount of money they are earning for their exports to other countries. For economic growth to occur, globalization is essential. A country must include a sustained government, basic education practices, and core infrastructure, such as roads, railways, and airports. Finally, access to foreign markets is necessary for the import and export of goods. The government of Botswana has potential to assist the country substantially. They have the ability to gain access to alternative sources of water to benefit the country's agricultural productivity. With higher-quality water, the health improves in not only crop production, but in the residents of Botswana as well. The people of Botswana have the advantage to attend college to gain understanding in the agricultural industry of the country. By gaining knowledge, students are better able to predict and understand what is going on in the country around them. Someday students may be able to improve the future of Botswana. Since 1966, when the country gained its independence, the infrastructure has improved significantly. Three miles of paved roads were available back in Botswana back then. Today the country has access to more than 4,000 miles of paved roads. Even though the infrastructure has improved, high costs of fuel hinder the direct transportation of crops throughout the country. This is when the country could look into alternative fuel sources as well. Ethanol would be a great place to start, if the country was willing to pursue it. Botswana as a country would have to be willing to work with organizations such as World Bank in order to receive financial assistance to improve their economic status. Increasing the amount of exports so they balance with the amount of imports, or even exceed imports would benefit the economy. At the same time, Botswana will also make international relationships with other countries to possibly open more doors for opportunities down the road. In conclusion, agricultural productivity may be increased in Botswana by improvement of infrastructure and institutions, and maintaining the connection to globalization.

Bibliography

- “A Firm Education Foundation.” [Http://sunsite.icm.edu.pl/untpdc/incubator/africahp/bwa/bw18.htm](http://sunsite.icm.edu.pl/untpdc/incubator/africahp/bwa/bw18.htm). Web. 12 Sept. 2009.
- “African Agriculture.” [Http://africanagriculture.blogspot.com/search/label/Botswana](http://africanagriculture.blogspot.com/search/label/Botswana). 7 Sept. 2008. Web 6 Aug. 2009.
- “Bostwana.” [Http://www.heritage.org/Index/Country/Botswana](http://www.heritage.org/Index/Country/Botswana). The Heritage Foundation, 2009. Web. 31 Aug. 2009.
- “Bostwana.” [Http://www.state.gov/g/drl/rls/hrrpt/2007/100467.htm](http://www.state.gov/g/drl/rls/hrrpt/2007/100467.htm). 11 Mar. 2008. Web. 24 Aug. 2009.
- “Botswana Infrastructure, Power, and Communications.” [Http://www.nationsencyclopedia.com/economies/Africa/Botswana-INFRASTRUCTURE-POWER-AND-COMMUNICATIONS.html](http://www.nationsencyclopedia.com/economies/Africa/Botswana-INFRASTRUCTURE-POWER-AND-COMMUNICATIONS.html). 2008. Web. 18 Aug. 2009.
- “Country Briefs: Botswana.” [Http://www.iiasa.ac.at/Research/POP/pde/briefs/bw-econ.html](http://www.iiasa.ac.at/Research/POP/pde/briefs/bw-econ.html). International Institute for Applied System Analysis, Feb. 2001. Web. 4 Sept. 2009.
- “Financial Institutions Helping the Investor.” [Http://www.discover-botswana.com/articles/financial_institutions.php](http://www.discover-botswana.com/articles/financial_institutions.php). Web. 18 Aug. 2009.
- “Republic of Botswana.” [Http://www.fao.org/europeanunion/funding/country/eu_bwa/en/](http://www.fao.org/europeanunion/funding/country/eu_bwa/en/). FAO, 2009. Web. 4 Sept. 2009.
- Ruma, Joseph. E-mail interview. 19 Aug. 2009.