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Zambia, Factor 7: Animal Agriculture

Zambia: Developing Animal Agriculture to Improve Food Security

Food insecurity is a problem that is faced by several countries in Africa, where one third of the population is malnourished. Zambia is a prime example of an African country currently struggling with food security, and placed 102 out of 113 countries on the Global Food Security Index. In Zambia, where a large portion of the population struggles with food availability and quality daily, it is essential that action is taken to address the country's current issues and put forth new developments to improve Zambia's food security, and decrease the number of people who live in fear of hunger and starvation.

According to the South African Regional Poverty Network, the typical family in Zambia tends to be quite large, ranging from 1 to 40 individuals, with the size of Zambian households averaging at 6.6 individuals. It is standard for men to be at the head of families; 78.5% of households are headed by a male member of the family. However, due to the prevalence of AIDS, an increasing number of women have found themselves widowed and tasked with raising their families.

Zambians depend mostly on cereals for their dietary needs, and they account for two-thirds of the dietary energy supply (FAO). Maize is heavily relied upon, and is a predominant crop in the Zambian diet. Starchy roots and fruits and vegetables comprise the rest of a typical diet. For many Zambians, food aid is an important source of calories in their diet, with 90% of households benefiting from food aid (SARPN).

In Zambia, primary education is free and is considered to be an adequate level of education. Children begin attending school when they are 7 years old, and primary education lasts for 7 years. There is still a large portion of Zambia's population that does not participate in the educational system. Approximately 39% of 15-24 year olds have not completed primary education, and the percentage of the population who have not gone beyond primary education is also quite low (EPDC).

Zambia embraced a policy of free health care in the late 1970s, however gaining access to services is difficult, and there is often a shortage of doctors and staff. The main health issues facing the country are AIDS, malaria, and malnutrition from poverty. Due to malnutrition, nearly half of children under 5 years old are stunted, while 15% are severely malnourished and underweight (WHO).

Many Zambians still practice rain-fed subsistence farming, and the majority of households participate in agricultural activities. On average, a Zambian household cultivated 2.5 hectares of land (SARPN). However, the poorest households often own less than 0.5 hectares of land to work on (FAO). Rural households are likely among these poorer households with less land to work with for 80% of them are classified as very poor (SARPN).

The Food and Agriculture Organization of the United Nations categorizes Zambia's common agricultural practices as a "Mixed Maize Farming System." Maize is by far the most common crop in Zambian farming, and is widespread in the country. However, farmers have begun to branch out into different types of crops such as cassava and a variety of cash crops. Cattle are the most important animal raised by

farmers, but only the most well off have access to livestock. Most poor, rural households are not able to own cattle, but will sometimes have access to a goat or a couple of chickens (FAO).

The consensus among world experts is that Zambia's agricultural potential has remained largely untapped due to the agricultural practice of subsistence farming, which is still standard within the country. Because most farmers rely on rain, they are very susceptible to droughts which can bring about widespread crop failure and food shortages (FAO). Crop yields are not at their maximum because there has yet to be a large scale implementation of more efficient and sustainable farming practices among rural communities.

Despite having recognized room for growth, Zambia has failed to tap into its full agricultural potential. Only 14% of Zambia's arable land is being cultivated, and under 30% of land suitable for irrigation is being developed (Mulenga). There are many barriers to improving agricultural productivity in Zambia, including issues surrounding land tenure, poorly educated farmers, not having access to finances, low water availability, and lack of power supply (FAO). This lack of agricultural productivity is caused largely in part by subsistence farming. However, not only is agricultural productivity affected, but the income of Zambian farmers is also affected. The practice of subsistence farming does not allow for surplus food, instead ending up with food shortages. As a result, Zambians are unable to have a living wage, as evidenced by 63% of the population living in poverty (WFP).

Most Zambian farms are run by smallholder farmers, who produce 90% of the country's maize. These farmers are often stuck on subsistence farming, or are unable to gain access to food markets. One major barrier that these small-scale farmers face is poor infrastructure. Having improved infrastructure is an important step in getting Zambian farmers access to food markets because these farmers live in remote, rural areas. Another barrier for farmers is the inability to access new agricultural equipment and technologies. In order for the private agricultural sector in Zambia to flourish, there must be increased access to resources and equipment such as storage space, processing equipment, seeds, and fertilizers (WFP).

Inadequate nutrition is a major issue in Zambia, and 40% of children are stunted due to deficiencies (WFP). The dietary energy supply of the country is not enough to meet population and energy requirements. In addition, the cereal heavy Zambian diet does not provide much in diversity and essential micronutrients. Overall, much of the country is suffering from being unable to meet their basic nutritional requirements because of a lack of food availability and quality.

Increased development in animal agriculture is a viable solution to increase food availability and quality in Zambia. Implementing sustainable practices for raising livestock and poultry would overall benefit agricultural production, and improve food security. By developing animal agriculture and spreading it across the country, farmers will be able to produce more food and increase availability, while growing quality crops and gaining access to nutritious milk, meat, and eggs.

Livestock production is not very widespread throughout the country, and 40% of Zambian households do not own any cattle (FAO). In the Mixed Maize Farming System, cattle are extremely important to have around as they can plow the farms and provide manure. Families without cattle have decreased agricultural productivity because they must do the work of plowing the fields themselves. This especially impacts widowed women, and their time is spent working on the farm rather than being productive in

other ways. They also have issues with soil fertility; many areas are experiencing a decline in soil fertility and an increase in soil acidity due to prolonged use of inorganic fertilizers. Zambian farmers are unable to purchase expensive mineral fertilizers, and soil fertility is unable to be maintained. Food availability has been greatly impacted by these factors; the low agricultural productivity and soil fertility stemming from the absence of cattle negatively affects the amount of food that is available, and the quality of food that Zambians have access to.

In the FAO's 2010 profile of Zambia, it was found that livestock production remained drastically below its potential. However, there has been some promise for Zambia's livestock sector more recently, and beef and dairy products have been growing around 7 to 8% annually while the poultry industry had doubled in size by 2013 (Mukanga). The role of livestock in Zambian agriculture has steadily been increasing overall, and the country has begun to reap the benefits. However, more work is needed to support rural farms in Zambia. Despite the increased importance of livestock in Zambian farming, the majority of small-scale farmers do not have access to livestock, and are unable to practice sustainable animal agriculture practices. Unfortunately, 63% of the population remains in poverty, and in order for there to be change for the poor, rural population, great care must be taken to ensure that they do not get left behind as the livestock sector becomes more developed and important (WFP).

Improving the status of animal agriculture in Zambia is crucial for increasing the amount and quality of food available. Cattle are needed as a means to work land more efficiently, and are a valuable resource for the production of organic fertilizer that will sustainably revitalize soil. The surplus that comes as a result of heightened productivity can reduce poverty by allowing people to participate in the market and make a livable income. Women would also be more empowered, as using cattle to work the land gives them more time to be productive in other areas of their lives. Also, the Zambian diet would be greatly improved with the introduction of quality animal products, helping more people achieve adequate nutrition. The consumption of milk, meat, and eggs would address the vitamin and mineral deficiencies that Zambians face. Research from the University of Illinois found that adding even a small amount of milk and meat to the Zambian diet would improve the supply of nutrients, including protein, calcium, zinc, iron, vitamin A, vitamin B2, vitamin B12, and vitamin D.

Two challenges facing animal agriculture in Zambia are water scarcity and animal health. Droughts are prevalent, and without water, keeping one's animals alive is difficult without the necessary resources. Farmers are also faced with outbreaks of disease among their animals. The Indaba Agricultural Policy Research Institute found that 62.7% of smallholder households have diseased cattle. If these additional factors are not addressed, the wellbeing of rural families will not be able to improve from increased animal agriculture because they will be unable to keep their animals alive- in order to develop animal agriculture in Zambia, these outside factors cannot be forgotten and support for disease prevention and access to safe water will be necessary.

In order to effectively develop animal agriculture in Zambia and tap into its full potential, smallholder farmers must have access to livestock and poultry and be educated on sustainable practices. Rather than focus solely on the production of livestock and poultry, they should be produced within mixed crop livestock production systems to farm most efficiently. The typical family will become more productive when cattle assist them in farming, and benefit from the source of fertilizer and nutrition that they provide. Developing animal agriculture in Zambia should also be seen as a step to bringing people out of subsistence farming, and a way of allowing them to participate in food markets and earn a livable income.

A successful project that is giving Zambian farmers access to livestock and teaching them sustainable practices is the Woman's Empowerment through Animal Traction (WEAT) project. A result of the partnership between Heifer International and the World Food Programme's Purchase for Progress initiative, this project provides women farmers in Zambia with cattle. The cattle allow these farmers to reduce their workloads, and increase the sale and production of quality crops. Additional benefits include the improvement of household nutrition through the consumption of milk and meat, and access to sustainable organic fertilizer. Participants are trained cattle management and sustainable practices, allowing them to take full advantage of a mixed crop livestock production system. WEAT also promotes growth within communities by having participants pass on their cattle's first female offspring to other families. The participants are also able to spread their knowledge of management and sustainable practices to their local communities after having been trained. WEAT or a project similar to it would be a viable solution to addressing food security issues in Zambia if scaled up. The project could even branch out and allow for access to other livestock, such as goats and chickens, that families would also greatly benefit from. By reaching out to a larger number of smallholder farmers across the country, more of the population could benefit, and food availability and quality would rise, as well as agricultural productivity and income.

The role of Zambia's government, corporations, and other organizations should be to provide the necessary resources for Zambian farmers to implement sustainable livestock raising practices and educating the people on how to manage their animals and farm sustainably. Due to the increasing percentage that the livestock sector of agriculture constitutes in the national GDP, it would be in the government's best interest to push initiatives to increase the development of animal agriculture in the country. As for corporations, they also have incentive to invest and take a hand in developing Zambia's animal agriculture because of the positive trends seen within the livestock sector and the large potential for growth. Zambia's government can work with corporations to overcome barriers such as lack of funding since there is great promise for the country's agricultural productivity should they successfully develop animal agriculture. Other organizations such as the United Nations or the World Food Programme should continue their work in reaching out to Zambia's rural communities, and providing people with the means to lift themselves out of poverty and gain access to the nation's food markets and adequate nutrition.

Within communities, there needs to be a collective effort to spread knowledge among the people. The same approach must be taken that is seen in WEAT, where neighbors are willing to help other families start out by sharing resources. The typical Zambian family can contribute by taking the time to learn and practice these new sustainable practices that are being encouraged. They should also begin to move away from subsistence farming for the improvement of the wellbeing of themselves and the local community.

If action is taken at the local, national, and international level to develop animal agriculture in Zambia, the food security of the nation would be greatly improved. By taking an approach that focuses on animal agriculture, they will be able to bring about effects that will be widespread and help bring people out of poverty and hunger- leaving one less country in the world suffering from food insecurity. Hopefully, after successfully helping one nation, these developments can applied to other countries once proven effective.

Works Cited

- Aregheore, Eroarome. "Zambia." *FAO*, FAO, 2006, www.fao.org/ag/agp/agpc/doc/counprof/zambia/zambia2.htm. Accessed 16 Apr. 2017.
- "Draft Cattle Lighten Women's Workloads and Increase Crop Production in Zambia." *UN World Food Programme*, WFP, 15 Dec. 2014, www.wfp.org/purchase-progress/news/blog/draft-cattle-lighten-women%E2%80%99s-workloads-and-increase-crop-production-zamb. Accessed 16 Apr. 2017.
- Larson, Debra. "Adding Milk, Meat to Diet Dramatically Improves Nutrition for Poor in Zambia." *Office of International Programs*, University of Illinois, intlprograms.aces.illinois.edu/content/adding-milk-meat-diet-dramatically-improves-nutrition-poor-zambia. Accessed 16 Apr. 2017.
- Mukanga, Chola. "Livestock Farming in Zambia." *Zambian Economist*, *Zambian Economist*, 19 July 2013, www.zambian-economist.com/2013/07/livestock-farming-in-zambia.html. Accessed 16 Apr. 2017.
- Mulenga, David. "Zambia's Crop Irrigation Hindered by Systematic Barriers." *African Farming*, *African Farming*, 3 Mar. 2017, www.africanfarming.com/zambias-irrigation-hindered/. Accessed 16 Apr. 2017.
- "National Education Profile Zambia." *EPDC*, EPDC, 2014, www.epdc.org/sites/default/files/documents/EPDC%20NEP_Zambia.pdf. Accessed 15 Apr. 2017.
- "Nutrition Country Profiles: Zambia." *FAO*, FAO, 2010, www.fao.org/ag/agn/nutrition/Zmb_en.stm. Accessed 16 Apr. 2017.
- "Poverty & Healthcare." *Our Africa*, www.our-africa.org/zambia/poverty-healthcare. Accessed 16 Apr. 2017.
- "SUB-SAHARAN AFRICA." *Farming Systems and Poverty*, FAO, 2001, www.fao.org/docrep/003/Y1860E/y1860e04.htm#P1_1. Accessed 16 Apr. 2017.
- © WFP. "5 Facts about Connecting Farmers to Markets in Zambia." *UN World Food Programme*, WFP, 23 June 2015, www.wfp.org/purchase-progress/news/blog/5-facts-about-connecting-farmers-markets-zambia. Accessed 16 Apr. 2017.
- "Zambia Baseline Survey." *SARPN*, SARPN, Sept. 2003, www.sarpn.org/documents/d0000523/exec.php. Accessed 16 Apr. 2017.
- "Zambia." *World Food Programme*, WFP, www1.wfp.org/countries/zambia. Accessed 16 Apr. 2017.