

Lauren Fillebrown
Phillipsburg High School
Phillipsburg, NJ
Rwanda, Factor 12

Rwanda: Food for Thought

Picture this... It's morning in sub-Saharan Africa. The bright, red sun is just peering over the barren land. As the sun rises, the animals of the land are slowly waking up, heading to the watering hole for their morning drink. The birds are flying in the now fiery sky, heading to a branch of an ebony tree for rest. Then native people are just starting to wake up to this beautiful scene, with the exception of one person Odetta, a farmer in Rwanda who has been up for several hours harvesting her produce for sale. Now the question is who is Odetta? But, more importantly, why is she significant? Odetta is part of a revolution. She is one of the 160 million women in sub-Saharan Africa that are responsible for feeding more than one billion African people. She is a small farmer in the developing third world nation who sells her maize to local markets for cash. In the big picture, she contributes to feed the poverty stricken people of Africa.

Rwanda, which is located in Eastern Africa, has recently experienced a population explosion. In 2009, the population within Rwanda was estimated to be 10 million (Arumugam 6). By 2020, the Food and Agriculture Organization (FAO) estimates that the population will rise to 14 million. With this rapid increase in population, it becomes a constant struggle to ensure food security for the citizens. About 84% of the Rwandan population is dependent on agriculture for both food and profit. Of the 84 %, a majority are single women with small children.

In Rwanda, agriculture is vital for the country's economy and lifestyle, but many factors make large problems for these things. Eighty percent of the people depend on the land for their livelihoods. Moreover, soil erosion is an imminent problem with some cultivation occurring on slopes of up to 55%. The fact that the country is landlocked, with the nearest ports, Mombasa and Dar-Es-Salaam, being over 700 miles away, places another constraint on Rwanda's development. Almost 50% of the country's population has a job pertaining to the agricultural industry. A significant amount of farm families depend on the family to carry out the field work (Arumugam 8). In some cases, women carry out more than 75% of the field operations themselves. Understanding a small farmer in a developing nation – where they live, what they grow, what they earn, the size of their family - is critical in figuring out how to reduce hunger and poverty, and to boost Rwanda's economy.

Significant progress has been made in Rwanda in regards to the agricultural productivity. Rwanda farms on an average of 1,205,090 hectares of cultivated land a year. The typical smallholder farmer cultivates an average of less than one hectare, whereas Senegal and Burkino Faso farmers now cultivate 5-10 hectares. A vast majority of the landholdings in Rwanda are owner-operated, self-dependent, giving them an incentive to use better methods for production. Rwanda's main cash crops are coffee and bananas. The main staple crops are tubers, pulses, grains, and roots. Nevertheless, farming is very labor-intensive. The main farming equipment used is hoes and machetes. Animal traction is not widely used, and less than a quarter of the Rwanda population own cattle. All land in Rwanda is arable land and can be used for farming, and marginal lands once set aside for pasture are now more intensely cultivated.

The Rwandan government must help the situation by intensifying their agricultural productivity throughout the nation. The main reason for this is due to the population rise; the country will need to increase food production to feed their people. The Rwandan government would like to see the agricultural industry as a market-oriented sector with high value in the production of staple crops. In due course, the Rwandan government would like to combat the population increase with an undecided safe alternative, which is needed to feed the country's people, and to open up jobs for the economy (Arumugam 9).

Rwanda suffers from a lack of agricultural knowledge. The act of physical labor and knowing how to prepare for harvest are examples of simple tasks that the Rwandan people long to be educated about. Owning and operating machinery is a powerful tool in achieving sustainable agricultural production as it enhances human potential. However, 98.5% of all land tilled in Rwanda is done by hand. The Ministry of Agriculture and Animal Resources Republic of Rwanda has found that the current use of tractors and animals is at 1.4%, respectively. Human labor is the most common farm power throughout the whole Rwandan country. The low levels of mechanization restrict the engagement of and performance of household tasks, more so by women. In addition, the use of human labor is being threatened by demographic trends such as urban migration, an ageing rural population, ageing farmers, HIV/AIDS pandemic, the lack of medical help, and a poor overall economy. Strategies formulated in study done by the Ministry of Agriculture and Animal Resources Republic of Rwanda envision that “25% of farm operations will become mechanized by 2015, allowing one in every 4 Rwandan farmers to either own and/or hire mechanization services in their farm” (Arumugam 5). Enabling access to the various farm mechanization options with the development of technical ability and knowledge of farm machineries and implements will serve as the key drivers in Rwanda’s growth and development in agriculture.

National Agricultural Policy (NAP), which was conceived by the Ministry of Agriculture and Animal Resource, envisions modern, professional, innovative, and specialized agriculture for Rwanda. Having recognized that agricultural mechanization is nearly absent in the country, the NAP sets modernization of agricultural production through development of animal traction farming and agricultural machineries suitable for Rwanda.

The Government of Rwanda hopes to restore Rwanda into a middle income economy, lessening the poverty line to 30%, and raising the average life expectancy to 55 by the year of 2020. This plan is called Vision 2020. To accomplish this vision, the Rwanda Government seeks to transform Rwanda into an up to date agricultural based country, modernizing 50% of its agricultural land by 2020. The Rwanda Government has seen dramatic improvements in other countries such as Ethiopia, Nigeria, and Zambia, who have transformed agriculture into a more modernized, progressive commercial activity. This agricultural mechanization has enabled all of these countries to increase crop production and improve living conditions for their citizens.

Within Vision 2020, Rwanda recognizes that citizens cannot subsist on land. The government would like to move Rwanda away from the traditional human labor and point the country in the direction of secondary and tertiary trade and subdivisions. Mechanization can help reduce labor constraints and thereby allow farm families to devote more time on off-farm activities such as schooling, jobs, and family undertakings. Investing in education and training to improve the performance of agriculture regarding research and technology in Rwanda will not necessarily end Rwanda’s hunger crisis and lessen the poverty, but these ideas and research topics can definitely aid the community members.

In Rwanda and the sub-Saharan Africa in general, women are the main farmers. However women do not get the support that is needed to be a successful producer of a crop. If these women are not getting the support they need to grow a field of grain, the next question is how will they support their family, especially if they are a single mother with young children? Since these women are not supported in their pursuit of farming and have no control over productive resources, these women cannot even feed their own families. How can they reach their ultimate potential? How will their kids eat nutritiously? It is estimated that nearly 150 million children in developing countries are underweight. In these developing nations, these children are the future and more importantly the agricultural industry. If their mothers and fathers cannot feed them, or even teach them properly how to farm a field, the future of the country will be in chaos.

Today, there are about 500 million small farmers in developing countries who support 2 billion people, which is about one third of humanity (“Food for Thought”). Within sub-Saharan Africa, there are 239 million people who are hungry. Worldwide, the FAO found that there are approximately 925 million hungry people in the world, 98% of them in developing countries. The United Nations World Food Program loosely defined hunger as not digesting the recommended amount of 2,100 kilocalories that an average person needs to lead a healthy life. The lack of energy results in a slower physical and mental system not to mention a weak immune system. The FAO also calculated that around half of the world’s hungry people are smallholder farming families. These people live off marginal lands prone to natural disasters, such as droughts or floods. With the added effect of climate changes that are expected to reduce the available arable land and water, the raising question is how to feed these hungry people? Rwanda fits this picture.

The roots to the food security problem all over the world date back to almost 30 years ago when investments in agriculture began to decline. The rapid decline was felt globally as governments and people alike felt that agriculture was unprofitable. In the developing countries, governments slowly took away older, costly farm equipment, but did not replace the instruments with new effective ones. This very same tactic is being carried out in developing nations still to this day. This is a rising concern as farmers do not have the right equipment to produce their crops. Again Rwanda is in this picture.

Take for instance the malnourished Southeast Asian countries such as Rwanda whose main crop harvest is rice. Through his research in creating the Bill and Melinda Gates Foundation, an organization aimed at improving agricultural systems in developing countries, Bill Gates saw that one way to enhance the health of people in impoverished areas is through the genetic modification of seeds (1). Over 90 million people eat a diet consisting predominately of rice. Such diets lack adequate vitamin A leading to weak immune systems. However, with genetic modifications enhancing local varieties of rice with beta carotene, Golden Rice was developed. This genetically altered crop saves more than 1,000 lives a year. As an added benefit, it could also boost the Southeast Asian countries’ economy, as they export their surplus to other regions with similar problems such as Rwanda.

One of the main issues in sub-Saharan Africa and Rwanda is the lack of food produced that is needed for both the economic system and community health. Scientists and researchers alike have found that agriculture can be the key that drives the growth and development for this crisis. Researchers erroneously believed that the problem of inadequate food supplies in third world nations had been conquered. According to the Bill Gates foundation, governments and donors shifted their attention to other problems, and had cut developmental assistance in agriculture from more than sixteen percent of public spending in developing nations to less than four percent from 1980 to 2004. This has hurt this area’s attempts to better their situation.

A key to being successful in stamping out world hunger is supporting the development of agricultural systems in areas where they are needed the most such as Rwanda. More importantly, there needs to be a global effort with funds to invest in education, training, and research for improved implements within the agricultural industry. Now some may ask, why agricultural development? Why not just send aid such as food, money, and medicine over to these countries such as Rwanda? Because it will not help the three quarters of the world’s poorest people who get their food and income from farming small plots of land the size of a football field (Gates 1). These people labor under difficult conditions, while at the same time their crops and livestock suffer from unique diseases, pests, and drought.

Gates found “the power of investing in agriculture is clear: agricultural development is two to four times more effective at reducing hunger and poverty than any other sector” (2). The only way small farmers can grow more is if they learn to be more productive. Gates and other researchers would like to see crops improved for “local conditions that have specific benefits farmers seek, such as increased yields, better nutrition, and tolerance to drought, flood, and pests” (4). Livestock production needs to be enhanced to

promote animal health and productivity by “improving animal genetics and veterinary care.” It is estimated “that nearly three-quarters of the world’s rural poor rely on livestock to meet their basic food and income needs” (Gates 10). However, investments in livestock production have been “severely underfunded, receiving just three percent of total global agricultural development” (Gates 10). Without funding, these developing countries cannot learn or even begin to enhance their way of living through agriculture.

The idea of investing in agricultural education and training in third world nations is at a happy medium within the depressed world today. To explain, look at the 1960s when the population was a little higher than three billion. In the 1960s, only two billion people were eating a sufficient amount of food to maintain their health. The one billion others were estimated to go hungry every day. Famines were popular in Africa, and government officials were troubled with how to feed a booming population. Concerned about this issue, government officials, teachers, scientists, farmers, companies, and researchers instigated a push for agricultural development in the areas where one third of the world’s people were going hungry. Now today in 2012, the population is above six billion. Of those six billion, one billion people go hungry every day.

The fact that the amount of people who went hungry stayed the same in a forty year difference is astounding. In the 1960s, one billion people went hungry out of the three billion within the world. Forty years later, one billion people still go hungry every day, even with the population increase of six billion. The amount of people who are hungry around the world actually declined as the population increased. Although as economies worsen and natural disasters threaten countries, the fear is how will the world maintain the global availability of food that has secured most of the world? The effort to increase worldwide accessibility of food has led to an enormous gain in agricultural development in third world nations. While the focus on this agricultural gain was aimed at feeding the hungry, the increase also helped open up jobs and helped countries with the debt. The main concern now is how to decrease the amount of malnutrition within these developing countries.

With the increase of agricultural awareness, the trend of investing money to teach and train these third world nations has increased. The world is now seeing that with a growing population and more people going hungry daily, the need to inform citizens on how to grow and be self-dependent is an important. The need is measured by the people that lack education and how it’s affecting their country. For instance, China has some crops that are genetically made to resist insect and pests. One study showed that five years after insect resistant varieties were produced, crop yields increased by 10%. For China, this insect resistance helped boost the economy and crop yield. If the China never learned how to use this genetically altered crop resistance, the country would have never experienced that outstanding discovery. Just like China, Rwanda has experienced certain advancements within agricultural that allowed the country to flourish for some time. However, it is when the education and training stopped that Rwanda and other countries failed to improve their production. There is a lot of potential change, and without the push for agricultural development, poverty and hunger will prevail.

If the world got together and actually taught and trained countries and poverty-stricken regions on how to feed their people an economy could be boosted... Lives could be saved... Children may actually be able to attend schools. The factor of agriculture education and training is not just going to help people in one area, it is going to help the worldwide community as trading increases, jobs open, and lives are lived longer. The world leaders need to address the countries that are experiencing food problems to grow as much as they can of the staple crops they grow now. If the countries increase staple crops, at least people can be fed and an economy can be started.

Next, the world leaders need to inform all countries world wide of the agricultural jobs that are needed to advance not only the developing nations, but also their own nations that they live in. If these developing nations cannot be self-sufficient, they will come to the bigger, more advanced countries for aid. Following

that, investors and researchers need to open up the market system within trade so that once food is grown, these developing nations can sell and trade their food. This will open up jobs, and allow for family funds to increase. Government and donors will need to look into giving aid to send teachers and trainers over to these countries so that the citizens can be taught as well. This process may seem costly, but in the long run this will help when the population increases.

After many of the previous improvements to agriculture that have become a reality, perhaps these enhancements will trickle down to Rwanda. Odetta's life or more realistically that of her children as adults would be of a higher quality. More and better food would be available. Time for education would be a reality. Even, possibly, amusement time would become theirs. That early morning sun may be enjoyed at last.

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