

Educating Farmers to Improve Food Security
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Introduction

Food insecurity is when people live in hunger or fear of starvation. This is due to undernourishment as a result of the cost or physical unavailability of food and/or inadequate nutrition. A few years ago around 852 million people were without enough food to eat on a regular basis. Due to the increase in food prices world wide this number is now one billion people, that is one out of every six people in the world. This increase in food prices has caused humanitarian, socio-economic, and security consequences in many developing countries that already had high poverty rates. These poor countries do not have enough money to buy the food needed for their people. The increase in food prices throughout the world has already set back the progress made in reducing poverty by several years.

The way in which poverty, hunger, and agricultural productivity are related are different in developing countries and developed countries. The developing countries sometimes depend on developed countries to provide basic needs such as food to its people. Examples of these countries include Tanzania and Uganda. Poverty, hunger, and agriculture depend on each other. If poverty or hunger is high, then the agricultural productivity is low. Also, if the agricultural productivity is low, the poverty and hunger are high. Well developed countries are better able to withstand poor agricultural years without increases in hunger or poverty. The poor developing countries are the ones that suffer the most from poor agriculture and economies.

In the long term the negative impacts on health potentially caused by a continued high food prices, delay the attainment of the health and nutrition related goals for the poorest households in the poorest countries. It has been shown that households reduce their food expenditures by 0.75% for every 1% increase in prices, so they are more likely to reduce both quality and quantity of meals. As the price of food has increased in recent years the most affected are the poorest of the poor and that number continues to increase throughout the world. Investment in knowledge, especially in the form of science and technology have featured prominently and consistently in most strategies to promote sustainable and equitable agricultural development at the national level. Although many of these investments have been successful the context for agriculture is changing rapidly. We must prevent any future loss of progress by teaching the farmers more advanced methods in preparing the land, growing, harvesting, and storing crops.

Educating Family Farmers

The key factor that I have chosen to increase agricultural productivity is educating family farmers about results from agricultural yield and sustainability research and providing access to and support for implementing methods from this research. At the G8 Summit world leaders agreed that the key to overcoming rural poverty and ensuring food security is long term investment in agriculture. This long term investment must include educating family farmers to help them increase productivity.

Tanzania is a developing country which is facing food insecurity. Tanzania is located in the eastern part of Africa. Agriculture is a very important part of the economy of Tanzania. Agriculture accounts for roughly half the countries income and about 80% of the population work in some form of agriculture. Most of the agriculture in Tanzania is done in small farms, approximately 70% of the crops are cultivated by hand hoe, while only about 10% is cultivated by tractor. One major problem facing Tanzania is the declining productivity of the land and the people due to poor technology. Some areas of Tanzania are facing desertification. Desertification is the process of turning productive land into bare

land. The affected area fails to support life of both animals and plants. An example of this area is Arusha, this is the region that I am from. In Arusha approximately 1% of the land is suitable for growing crops. The Arusha region cannot afford to lose any of this productive soil. In 2006/2007 only about half of this land was actually being used for crops. Currently maize is the main crop in the region followed by beans and sorghum. More than 65% of the rural population of Arusha work in some form of agriculture, most of these are small family farmers.

In Tanzania, many families are polygamous. The average family size is between 25 and 35 people. Most of the people in this family unit have never been to a formal school. Usually one father with several wives and the children from each of the wives will make up the family. The basic diet consists of maize, beans, beef, meat from wild animals, and milk for the rural people. Income is limited to selling of cows, goats, donkeys, or crops. A typical farm is about 2 acres and a family may stay on this land for one to two years before moving on to a new area. When the grass for grazing is poor then the family must move to a new area. The basic crops that are grown are maize, and beans mainly to eat not to sell. Food is purchased at outside markets in towns that might be as far away as 100 km, which takes 2 days to travel one way. The typical rural family in Tanzania lives a very isolated and self reliant lifestyle.

The outcome of desertification is famine and malnutrition, floods, poverty, migration, and loss of biodiversity. Research shows us that the income and success of farms in Africa are directly related to the climate. When the weather is good the farmers are doing well, but when the weather is poor the farmers suffer very poor results. Therefore, the small family farms of Arusha in Tanzania are extremely dependent upon favorable weather conditions. In Tanzania as a whole, only 4% of the land is suitable for crops with only about 1% being suitable for permanent crops. If Tanzania were to have a few years of drought its agriculture would be devastated and much of its land would no longer be suitable for growing crops. Tanzania needs to educate its rural population about new research and provide support for the family farmer so that they can increase production and maintain quality and quantity of the food supply for the people of Tanzania.

Long term investment in small family farms is essential for the growth and sustainability of food production in poor countries like Tanzania. One part of this investment must include educating and supporting the farmers about new research. Without this education the research the experts do will not change current practice even if it is not the best practice. Most small farmers do not have access to fertilizers, quality seeds, modern equipment, and modern techniques that could increase production and decrease food insecurity.

One way the government of Tanzania, along with the help of the international community, could provide training and other forms of technical assistance to the rural farmers of Tanzania to help them be able to use genetically modified crops. The government of Tanzania could not afford this new technology on its own. Egypt has offered to help Tanzania develop genetically modified crops, but it is an expensive and lengthy process. Some farmers in Tanzania are unsure about the idea of genetically modified crops. If the government is wrong with this research the small farmers are the ones that will pay the price. The small farmers cannot afford to experiment with genetically modified crops unless they are supported by others. The small farmers should not have to shoulder all of the risk.

While the education of the rural people of modern techniques is extremely important in improving food security, the communication must go in both directions. For instance, the pastrolists of Tanzania have vast knowledge and have successfully adapted to their changing environment. Research has found that pastrolists have implemented techniques such as rotating grazing, burning pastures to regenerate growth and predicting weather. If the native pastrolists could work together with experts that have knowledge of new research, then everyone would benefit. By integrating conventional knowledge and native techniques we will be able to find the best combination of techniques and then educate all the

pastoralists about these. This effort, however, will not come easily nor cheaply. Many people will need to be able to come together to discuss current practices along with new research. The key is not just the education, but the communication of ideas to better maintain the land and improve production, therefore increasing food security.

Irrigation is a major factor that could limit the reliance upon proper rainfall during a growing season. The support and implementation of irrigation systems could greatly increase the productivity in Tanzania. Again we are looking at something that small farmers cannot afford without the help and support of outside sources. Proper irrigation can help maintain the productivity of land that might otherwise become unproductive.

Poor family planning is the condition where by the family are not ensuring appropriate number of children and improper spacing of time between one child and another. This leads to the lack of basic needs, such as food, clothing, shelter, and education. If the people will limit the number of children then they will be able to provide food for all members of the family. The rural families live isolated from towns and sometimes have more children to feed than the adults can manage.

Another hardship for the people of rural Tanzania is poor health care. When an adult has health issues, they become unable to provide food for the large families. With little or no health care this becomes a very serious concern. Again the isolation of many of the rural people in Tanzania means little or no access to healthcare. The rural farmers are also mostly self-reliant therefore if an adult is ill or injured there is no one able to step in and do his/her work that the rest of the family relies upon. The standard of living for these families is therefore very low.

Conclusion

Educating the family farmers is extremely important in Tanzania because of these conditions. If the family farmers were educated they could increase the production of food to better support their large families. The educated farmers will use modern methods of cultivation, and advanced tools to gain higher production. Teaching about soil types and matching crops to soil and climate of the region will help increase food production. Educating the farmers about modern methods of planting, pest control, irrigation, and disease prevention can increase food security in Tanzania.

The main objective of the Agriculture Research and Development Department in Tanzania is to improve food security by finding new technologies that will be good for the environment and increase productivity for years to come. Providing this information and technology to the small rural farmers and supporting the farmers as they change from current practices is one of the most important aspects of this objective. Without this support the small farmers will not be able to or willing to change. The government must be willing to work with the farmers to help develop the best methods of agriculture for each particular region and understand that the farmers will be able to provide valuable information that will help develop the best methods.

The farmers need to be educated about modern methods of farming, new research, and then supported as they adapt to these new methods. Current education in rural areas of Tanzania is very poor. Provided this education about farming, and family planning can help raise the standard of living for many people. The pastoralists depend on rainfall for their survival and for survival of their livestock. Education can help them to become better at dealing with low or no rainfall. Providing education to the people of rural Tanzania will help them to develop and improve their agricultural production.

The increased productivity by small scale farmers could greatly affect their lifestyles. Educating the isolated farmers in Tanzania on new research and providing modern technology could help them to maintain a permanent residence were the soil can continue to productive over many years. Irrigation, rotation of crops and GM seeds are ideas that could increase productivity and sustainability over several years at the same location. If the farmers are not properly supported as they attempt to change they could end up worse than they were before. Therefore this support system is crucial to the success of any program.

Educating the rural farmers in Tanzania and the follow up support is not going to come easily or cheaply. International financial support will be critical to such a program. Improving irrigation and farming practices is going to need much local support that the government of Tanzania will need to support. The rural farmers will need to be able to work together with each other and with outside people to make sure of the success of any program.

Tanzania and much of the world is at a crossroads. The knowledge and research is out there that can help the farmers of these countries. The international community and governments need to put aside differences and work together. They must work with the farmers from developing nations to help them improve production and be able to sustain this improvement for years to come. This effort must include two way communication with the farmers and provide the needed support for the small farmers. Food security is a huge problem, one that cannot be solved by simply telling the farmers what to do differently. We must be able to work with the farmers over extended periods of time and developing together the best practices that will work for the small farmers. One solution is not going to work for every situation and we must all keep that in mind as we progress through the solutions.

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