

Agricultural Education's Effects on Ugandan Food Security

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In 2006, *The Last King of Scotland* hit theaters, pulling the country of Uganda into America's consciousness. Uganda is located in Eastern Africa, just west of the Horn of Africa. Its capitol city is Kampala, and it borders Sudan, Kenya, Rwanda, Tanzania, and the DR Congo. It functions in a one party system, led by President Yoweri Museveni, who was elected seven years after the movie takes place. The movie chronicles the rise of Idi Amin, a dictator bent on rising and staying at the top, no matter the bloody consequences. In 1979, Idi Amin was ousted by Ugandan Nationalists. Today, Uganda faces another power-hungry leader. Joseph Kony is the leader of the Lord's Resistance Army, a group that since 1988 has struggled to gain power over Uganda and lead it according to the Ten Commandments. On the quest for this leadership, they've abducted children as slaves, killed entire villages, and forced the evacuation of thousands from their homes. Peace is returning to the region as Kony and his army signed a permanent ceasefire in 2008 (Country Profile: Uganda, Timeline: Uganda). At the same time that Uganda fights its civil wars, it must also fight a war against hunger. 40 percent of Uganda, according to a recent survey, is food insecure, and at least 56 percent of their farming is subsistence (Ministry of Education and Sports National Agricultural Education Policy). These wars have left their scars, however, and as a result of the displacement of persons and two-decades long fighting, men and women have been away from their property and from farming. Because of this, the lack of education for Ugandan farmers is a significant factor in food insecurity.

Uganda's family life is greatly affected by the village mentality; over 80 percent of Ugandans live in villages. Family life includes relatives; and many times up to twelve people can live in the family mud hut. Polygamy is still very strong in Uganda, and tradition dictates that the child belongs to the father. This can make families large, many times with four or five children, and multiple wives. By American standards, Ugandan women have children young, often in their early teens. Families will usually all live in the same hut, made from mud (Kigongo).

The Ugandan diet is focused on a few key staples. Cassava, beans and rice are eaten daily. Eggplant and palm root are also very popular foods; and sim-sim paste or sesame seed paste is another staple. Posho, corn meal with water added, is something akin to tasteless congealed mashed potatoes and is also eaten frequently. Meat is expensive, and while many families keep chickens or ducks, they are not eaten on a regular basis. Matoke, mashed and steamed banana, is another favorite. Fresh fruit abounds in Uganda; mangoes, bananas, and pineapple are very popular for those that can afford them (Byrnes).

Education is mainly for children. While some adults earn diplomas and bachelor degrees, it is not common. School is supposed to be free, but there are not enough resources, so many people must pay school fees in order for their children to attend. These fees are often much too high; and as a result, children do not go to school. Extended family members often pitch in and help the family pay for the children's education, books, and uniforms. Many Ugandans send their children to the cities to board and be educated. Children are lucky if they attend primary school, let alone high school (Country Profile: Uganda). Income for Ugandan rural subsistence farmers is largely nonexistent. Often, the majority, if not all of their crop will go to feeding themselves, and even then it can fall short. The income they do have is used in the market place usually to buy more foodstuffs.

Uganda is primarily agrarian. Farming has always been a large part of the culture, with the majority of the crops going to feed the family and the little surplus being used to trade for other goods. Farming has now, however, also become a large part of the Ugandan economy. Agriculture accounts for 36% of the GDP and 81% of the labor force. Over a third of Uganda's land is used for farming, and 68%

of Uganda's farming is subsistence. Uganda's main food crops include millet, corn, beans, sesame seeds, plantains, cassava, sweet potato, and groundnuts. Plantains, bananas, cassava, and sweet potato are the largest ones (Uganda: Agriculture).

Tools are considered a luxury and are not used by most subsistence farmers. Advantages such as tractors, fertilizer, and some types of seed are much too expensive for the typical subsistence farming family. Most of the farming is done by hand or with rudimentary, non-mechanized tools. Hoes and machetes are very common, and the seed is taken from the previous harvest. Whole families participate in the agriculture process (Otiso).

Major barriers to improving Ugandan farm productivity and income abound and cross various regions of the agriculture process. A part of the problem comes from the shifting of urban-rural populations. "The country's high rural-urban migration is partly a reflection of the increasing difficulty of accessing agricultural land because of rapidly increasing rural populations and decreasing or stagnant agricultural output that is increasingly unable to sustain families" (Otiso 119-120). Water problems create a huge barrier to food production. Floods precede prolonged droughts. In September of 2008, drought had caused 70% of crop losses in the Karamoja region of Uganda, according to the World Food Program. What is worse is that Ugandans from this region are barred from seeking water out of fear of being attacked by AK-47 wielding bandits, looking to steal animals or money (Ross). Health problems from HIV/AIDS, malaria, and other diseases—disabling men and women from working in their fields—play a major role in barring agriculture production. Another large problem is the lack of education among school age children and older persons. Agricultural practices are taught in schools, but there is a current lack of adequate education in Uganda, caused partly by the twenty-year civil war, which caused the education infrastructure to collapse. Often, parents are unable to pay the school fees needed to send their child to school, despite the fact that Ugandan education for children is supposed to be free. In addition, people have been away from their farms for many years. "Despite having some of the most fertile soils in the country and flat lands favourable to mechanised agriculture, agricultural production in northern Uganda fell throughout the 90s as people abandoned their farms and homes for sanctuary in internally displaced people's camps" (Lirri).

Education has always been a key factor in determining agricultural productivity and sustainability. "Research shows that basic education affects small landholders' and subsistence farmers' productivity immediately and positively, and that a farmer with four years of elementary education is, on average, 8.7 per cent more productive than a farmer with no education. Moreover, farmers with more education get much higher gains in income from the use of new technologies and adjust more rapidly to technological changes" (Gasperini). In Uganda, children in primary school are often taught the basics of agriculture. "Agriculture is one of the subjects taught from primary to university level in Uganda," [Noah Musoke, who has organized a program to help the orphaned children of his village] says. "Children study about the soils, crop husbandry, animal husbandry, agricultural mechanization, weeds control and pests control among others" (Bewley). Lack of education greatly affects Uganda because of the current lack of infrastructure across the board. Education, like other areas, was affected and debilitated by the civil war. Uganda's education system was still recuperating from the troubles caused by Idi Amin's reign, when the LRA began its campaign (Anderson 118). The lack of knowledge related to this farming is a critical roadblock to sustainable agriculture for a subsistence family farm. In their study *Farm Environment, Farmer Knowledge and Technical Efficiency*, professors Purisima G. Bayacag and Agnes C. Rola list education of the farmer and his or her spouse as one of the four main factors of technical efficiency in agriculture. In addition they found that those farmers who used the best practices scored 10 percent higher on average when they took a technical or crop management knowledge test.

While Uganda promises that four children of every family can go to school free of charge, this promise is often not fulfilled, and school fees abound with the cost of uniforms, books, and supplies added. On top of this, many children have been hiding in the bush, been forced into the Lord's Resistance

Army, or have been displaced to Internally Displaced Persons camp. Education is better and more common in urban areas than in rural areas (Anderson 118). This unfortunately exacerbates the problem. Rural children are more in need of agricultural training than urban children, but most of it is taught in primary school, which is more common in urban areas. A government initiative, called Universal Primary Education, was started over a decade ago, in an effort to bring widespread free education for children to Uganda (Okello). The physical infrastructure however, was and is, still lacking heavily from the instability the war caused, and as a result, the quality of the education declined significantly. “Although Uganda’s introduction of universal primary education in 1997 dramatically improved enrollment, the latest census data indicate that more than 700,000 children aged 6 to 12 have never attended school” (Sabine). The northeastern part of Uganda has suffered much higher losses and instability as of recent. Over eighty percent of the children there, ages 7-18, have never attended school. There’s a large gender gap in education between men and women. Of the thousands of displaced persons, women and children make up 80 percent. In addition, there is a significantly higher number of males that attend primary school as opposed to females. In addition, the majority of the children that have not attended school are girls (Sabine). This makes a large difference on farms. Technical efficiency on farms is determined not only by the farmers knowledge, but also largely by their spouses (Bayacag). This means that even if women “simply” wives of farmers as opposed to sole farmers, they contribute heavily to the food production of farms.

Agricultural education affects the environment as well. John Pender et al, discovered that farmers who had a secondary education had significantly less eroded soil. “Education helps to increase farmers’ awareness of land degradation problems and potential solutions, and thus contribute to efforts to ameliorate erosion” (Pender 10).

Trends for this factor are improving in some areas, but stagnant in others. The Universal Primary Education program in Uganda is one of the easiest ways to track the trend towards education. Started in 1997, it eliminated school fees for children. Since then, it has decreased the dropout rates of boys, but has failed to make a large impact on girl dropouts. It has also increased the percentage of children younger than eight entering school by nine percent (Grogan). This means that education and, subsequently, agricultural education has been getting better. Food productivity trends have also been on the rise. Since a relative peace has come to the region, people have been moving back to their own land and taking a larger stake in their farming. “The end of the active conflict against the LRA offers opportunities for people to take charge of their food security and rebuild their lives” (Lirri). Live stock numbers in various regions including Northern Uganda, Karamoja, and Western Uganda, show 20 percent increases from 1991 to 2008 (Lirri). PMA, however, lists multiple problems with the current agricultural education, including: “lack of a coherent policy for agricultural education and training, insufficient funding for agricultural education and training, ineffective institutional framework for the delivery of agricultural education and training, inappropriate curricula and teaching and learning methodologies in agricultural education and training, negative attitudes towards agriculture in general and agricultural education and training in particular.”

There is still work to be done, however. As previously stated, millions of children are not in school, and are thus not receiving the basic level of primary agricultural education. In addition, millions of families are just now returning to their farms after years, or even decades, spent displaced. Learning and re-learning agriculture is a critical step in food security. Professor Nuwaga, a poverty development expert at Makerere University, claims the best way to rebuild agricultural productivity and infrastructure is to embrace certain techniques, such as irrigation (Lirri). Improving education across the board is a critical step for stability and sustainability. Children must begin to learn it in primary school, and adults must be updated on more modern practices. Farmers must learn basic techniques of modern farming to ensure the infrastructure and sustainability of farming as a whole.

Increased agricultural productivity will have a positive effect on the Ugandan citizens' agricultural education and training. As in any trade, actually practicing is one of the best ways to learn. More productivity, more farming, more practice will ensure that the methods become perfected over seasons. The more that farmers use good sustainability and modernized practices, the better they will become at them. Once people return from internally displaced person camps, they will be able to return to farming. If they increase their agricultural productivity, their children will be able to learn from them, and subsequent generations will have trained a whole other level of agricultural training their fathers and mothers were unavailable to get because of their displaced status. Increasing education at first, however, could be a struggle. It will mean sending children to school, away from work they could be doing on the farm. It will mean time taken away from the actual farming to learn about farming theory. Overall though, the tradeoff will be worth it, because it will make the agriculture and the farming sustainable. It will make the crops more plentiful each year. So the original cost, if it exists, will be well worth it.

Solving the Ugandan food security issue in regards to education must be a two-pronged approach. First, the current farmers must be taught. Agricultural training must be first and foremost extended to those currently in internally displaced person camps, and those who have recently returned from internally displaced person camps. This training should cover the use of irrigation, new tools, and hybrid crops. In addition, training in modern techniques needs to be extended to those who are not necessarily just returning from internally displaced person camps, but to all struggling Ugandan farmers.

The second prong must be educating children from school itself. This involves two steps. First, ensuring that the students are in school, and second, ensuring that they are being taught about agriculture. Starting children in Uganda off early with critical farming knowledge is a key step in ensuring that successful agriculture becomes sustainable in Uganda. This should be implemented with classes on agriculture integrated more fully into the curriculum, and the government mandating agriculture as a critical part of curriculum. Education for the children must also be a community-based event, especially in rural communities where schooling is not necessarily a certainty.

Universal Primary Education is already doing a large part in increasing school enrollment; as previously noted, however, it has fallen short in some respects, especially in regard to the northern regions. Thus the UPE program along with UNICEF should be large players in putting and keeping kids in school. UNICEF has already started one such initiative for Uganda, and with time, funding, and support, they will hopefully be able to increase the numbers of children in school even further.

Uganda's Plan for the Modernization of Agriculture was started in 2000 and hopes to be complete by 2015 (Ministry of Education and Sports National Agricultural Education Policy). This commitment by the government is critical to the success of agriculture in Uganda. The main goal of this initiative is to undertake agricultural training, focusing specifically on modern techniques. Moreover, the PMA recognizes the importance of agriculture to the eradication of poverty. This plan is particularly ideal because it focuses not just on the one factor of education but of the many factors that affect agricultural productivity such as: local involvement and decentralization of policies, gender-equal actions, overhauled markets and increased incomes, and empowerment of local governments. This last one is essential as success often stems from specific plans. The more tailored a plan is to a community, the better that plan will function. Local governments must play an active role in the increase of agricultural education and training if it is to take root and succeed.

When I visited Uganda in August of 2009, I was able to meet a multitude of kind, generous Ugandan people who had had their lives torn apart by the civil war. Some had been raped, some had been forced into slavery, and some had been displaced for years. At the center I worked at, the girls were taught not only basic education and skills to make a living, but also farming techniques. Once a week, they would go the Center's farm and work, learning how to spread seed, till the fields, and weed. This farm itself was a testament to subsistence farming, with a goal of providing 80% of the Center's food.

Beyond that though, it taught the girls the basics of agriculture, ones they had yet to learn because of being forced into the Lord's Resistance Army at an early age. Because of this education, these girls will be able to farm for themselves. They'll be able to feed their families. They'll be able to pass on farming knowledge when their children grow up. But most of all, they'll be able to have a better life. Uganda has had a brutal history. Unfortunately, the wounds of war can go far beyond the battlefield, touching family life, government infrastructure, and hunger. Before that, however, Uganda was suffering, agricultural wise.. Drought, poor planning, lack of infrastructure, land struggles, and the war tearing people away from a semblance of a normal life have all contributed. Education is at the heart of these problems, however. The knowledge gained and shared by education can begin to tackle the other food security risks by first understanding them. Education has suffered because of these things, but it is a key stepping stone for all of Uganda's future food security, one that could, if not solve, at least ameliorate the other agricultural problems. With the right plan and the right attitude, Uganda and its food security can and will recover.

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