

The Effects of Land Ownership On Biofuels Production in East Africa

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The impact of biofuels can be felt all over the world due to the current pressure placed on environmental sensitivity. Decisions whether biofuels are negative or positive have been raging over the past year, but this determination often depends on a country's economy and government. The choices made by national governments and individuals will change our future forever.

Families in East Africa live in a tropical climate. Soil degradation, flooding, and drought are issues affecting the farming in that area. Rainfall is abundant in some parts of East Africa, but the rain comes in heavy cycles, so the land is usually either too dry to live off of or too wet to plant in.

The average family in East Africa has five children. Many families are extremely dependent on the subsistence crops grown, and in the majority of countries in East Africa, around 80% of the labor force works in agriculture. This makes famine a serious problem in times of drought, especially since only 2% of their land is irrigated. When anywhere from 23-85% of the population lives in extreme poverty, food can be a huge issue.

Through a sponsorship program called Compassion International, I sponsor a little girl in Tanzania. Her family consists of a mother, father, and eight children. Most houses in their area are made of dirt floors, mud walls, and thatch roofs. They farm a small piece of land, but because this land is owned by either the government or community, it could be taken away at any time. The average farm in Tanzania is anywhere from 2 to 6 acres. Most of the workers in these small Tanzanian communities are subsistence farmers, and they earn the equivalent of \$6 a month. The main subsistence crops grown are corn, sorghum, millet, rice, wheat, beans, cassava, potatoes, and bananas. In most cases, women play a major role in agricultural practices, and are also allowed to vote with the men. According to the Tanzania National Website, "About 70 percent of Tanzania's crop area is cultivated by hand hoe, 20 percent by ox plough and 10 percent by tractor." On top of all this, HIV and AIDS are common in East African communities, and 8% of adults have HIV/AIDS in Tanzania.

The average diet of families in this region consists of maize and beans. In Tanzania, 69.4% of its citizens are literate, but schools are bare and limited. Most children only complete primary school, and this is done in a one-room school house with an overfull class.

The focus of my paper will be securing property rights and access to finance; improving farm marketing infrastructure and institutions; and addressing problems created by globalization and trade policies for subsistence family farmers.

The main problem with serious biofuel progress in East Africa is land ownership. In many East African countries, land ownership is nonexistent or corrupt. In most cases, the countries have communal farms, where a community owns an amount of land. Either that or the government owns all of the land in a country, and leases it to peasant farmers.

Every community has arable land for the use of the members. It is the duty of the community head to apportion the land. The community leader is the custodian of the land. This means that the leader exercises control over the land. (Eboh 68)

Based on this quote, we can assume that land can be taken away from a family and given to someone else at any time. This means that improvements our family makes on their land could be benefiting a different person. This destroys any incentive to practice conservation techniques or more efficient farming practices. "Ownership of property is ultimately and essentially communal" (Eboh 62). Malnutrition is far too common in East African communities. If the land farmed belongs to everyone, then the land must be able to feed everyone before our family can consider growing biofuel crops.

The idea of attempting to grow biofuel crops is unstable because at any time, the government or community could take the land away from our farming family. This instability gives our family no desire to improve their land or invest in it. Switching from subsistence farming to biofuels farming would require such an investment, and would result in short-term costs that the family may not be able to afford. Direct costs would include buying new seed, perhaps changing soil type, and maybe irrigation. However, the indirect costs have more of an impact.

On our family's small plot of land, they grow subsistence crops, the majority of which are probably consumed. In fact, because the family doesn't own the land, they may not even be able to grow enough food to survive. In a World Bank report written in 1990, we're told that the majority of the poorest people in the world live in rural Sub-Saharan Africa and Asia. These poverty stricken people are "either landless peasants or subsistence farmers with insufficient land to feed their families" (Ogle 76). In a country where land ownership was fair, this wouldn't be a problem, because the family could buy more land to support themselves with. However, the family is allotted or leased land, so not having enough land is a serious possibility. If, however, our family decides to grow biofuel crops, they either have no food source, or a drastically smaller food source. They would need to make more money in order to be able to survive. Unless the biofuel crops bring them an immediate profit, famine is a bigger threat than ever before.

More problematical, however, are those schemes which yield no direct or immediate financial gains and only more diffuse benefits such as increased conservation of fuel, convenience, environmental improvement, gradual increases in soil fertility or better public health... One of the common problems relating to renewable energy schemes is that long term and indirect benefits are often either not perceived by the individual, or are overshadowed by the short term costs. (139-140 Hall)

As Hall states in this quote, the costs can outweigh the benefits. Ok, so if our farmer can make up his short term costs and get to the point where the family is benefited more by biofuel crops, then that's great. However, with unstable land ownership, the farmer could very well invest into better land and crops, only to have his efforts given away by the government to a high-ranking official. Because of these possibilities, no sane farming family will be willing to risk the investment.

Individual farmers are reluctant to invest in agricultural improvements under communal tenure systems because these lack a clear definition of property rights or that such rights are often contested and, therefore, insecure for private investments. (Kanyinga 22)

The land ownership problem has been around for years. In a 1971 conference, Uchendu writes a paper mentioning that

Although such other principles as residence, clientship, service to a higher authority, or mere political affiliation or allegiance may give one access to interests in land, other noneconomic factors like ethnicity, social interest, local social and political status do impose restrictions on access to land...they often define not only who gets what type of interests in land but how much interest. (Uchendu 13)

This passage tells us that before the 70s, land was leased out by the government, and corruption was common. Though steps are made to improve land tenure and eliminate corruption now, problems are still a serious factor when it comes to farmers improving their holdings. Biofuels would only add to the land problem, because, as I said earlier, it creates a domino effect with field space, making it difficult for farmers to grow food as well as biofuels. "The acquisition and allocation of land and other forms of

capital can often be critical to the acceptance of a biomass-based innovation” (Board on Science 52). So, until land ownership can be reformed, biofuels have a slim chance of flourishing in East Africa.

The dangers of losing their land is a serious and close problem for our family, because not only can corruption in the government result in the loss of their land, but land can be taken away for tourism purposes as well. It’s every country’s desire to boast a booming tourism trade, because tourism brings in large profits. Therefore, it’s only natural for the government to take land away from farmers in order to entice tourists into their country. With so many costs and dangers bearing down on our small farming family, growing biofuels is the worst option for them.

The dangers of falling for the glamour of growing biofuels could potentially be fatal for poor families. Because of this, we need to make sure to educate these families about the drawbacks of growing biofuel crops. Without more knowledge about changing crops, they cannot make decisions that are beneficial to their community and family. Our family must be able to weigh the costs and benefits for themselves.

Another factor to having our family grow biofuels is the size of their farm. 2 to 6 acres wouldn’t produce that much crop, and in many towns where vehicles aren’t readily available to transport crops, the cost of shipping biofuel crops would once again outweigh any monetary benefit the crops might bring.

In many cases, growing biofuels instead of subsistence crops does not benefit our family. However, this doesn’t mean that they can’t grow biofuels at all. Recently, the idea of using types of grass to make biofuels has developed. The process, called cellulose processing, opens new possibilities for our family. Grasses can be planted almost anywhere, thus letting our family use all of their extra space. On top of this, grasses can be used in a double crops technique, where our family would plant rows of grass between the rows of subsistence crops. This complete use of all land would bring in an extra profit for our family, allowing them to spend more money on food and luxuries. This is only possible if our family finds the right crops though. For our family to take full advantage of double cropping, and thus get full use out of their land, they must be further educated. Matching crops that will grow well together is important, and our family will have to take into account how the grass would grow with a lack of sufficient water. There is still a risk involved, as there usually is in business investments, because if our family spends money on grass seed and drought wipes the grasses out, they are farther in debt. However, unlike the original biofuels risk, this one is more likely to benefit all involved.

The grass biofuels solution doesn’t solve everything, because the corruption and land insecurity still exists. Until we solve the corruption in land tenure, subsistence farmers cannot take full advantage of the current biofuels opportunities, but the advantages they can take will improve their lives.

The governments of East Africa hold the blame for the insecurity in land ownership. In order to help the peasant farmers and increase crop productivity, the governments must change or purify their land tenure laws. If corruption continues, then the people have no faith in their government and no pride in it. If communal land ownership continues to exist on the level it does now, individual families have no chance to educate themselves and make their own decisions. If a person owns the land they farm, they have something to work toward and be proud of. In contrast, if a farmer knows that their work will go to benefit, not their family, but someone else entirely, they have no reason to attempt to improve their work.

The idea of growing biofuels in East Africa is by no means perfect, but the potential of biofuels flourishing still exists. With changes to land tenure, the people will gain a new security in their work, and they are more likely to look for ways to move forward. Biofuels provide the means to move forward, and with change, the people of East Africa will leap at the opportunity that biofuels represent. If biofuels are a reliable source of income, more small farmers are likely to grow them, which will in turn help them feed their large families and reduce levels of malnutrition in their area. Biofuels represent a gateway into

progression and a means to move from a developing country to one of the developed. With government support, the people of East Africa can find funding for the adoption of biofuel crops. Greg Pahl mentions in his book about biodiesel that, in reference to biodiesel development, "In most cases, lack of funding has been a major obstacle" (126). This comment holds true for all biofuels, and unless the governments in East Africa provide support to their farmers, biofuel growth in that region will remain a far-off dream.

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