

Ariana Shapiro
TST BOCES New Visions - Ithaca High School
Ithaca, NY
Kenya, Factor 17

Slowing Population Growth and Urbanization Through Education, Sustainable Agriculture, and Public Policy Initiatives in Kenya

Kenya is a richly varied and unique country. From mountains and plains to lowlands and beaches, the diversity within the 224,961 square miles is remarkable. Nestled on the eastern coast of Africa, Kenya is bordered by Tanzania, Uganda, Ethiopia, Somalia, and the Indian Ocean. Abundant wildlife and incredible biodiversity make Kenya a favorable tourist attraction, and tourism is the country's best hard currency earner (BBC). However, tourism only provides jobs for a small segment of the population. 75 percent of Kenyans make their living through agriculture (mostly without using irrigation), on the 8.01 percent of land that is classified as arable (CIA World Factbook). As a result, agricultural activity is very concentrated in the fertile coastal regions and some areas of the highlands. Subsistence farmers grow beans, cassava, potatoes, maize, sorghum, and fruit, and some grow export crops such as tea, coffee, horticulture and pyrethrum (HDR). Overgrazing on the arid plateaus and loss of soil and tree cover in croplands has primed Kenya for recurring droughts followed by floods in the rainy seasons.

The increasing environmental degradation has had a profound effect on the people of Kenya by forcing farmers onto smaller plots of land too close to other subsistence farms. Furthermore, inequitable patterns of land ownership and a burgeoning population have influenced many poor farmers to move into urban areas. The rapidity of urbanization has resulted in poorly planned cities that are home to large and unsafe slums. Farmers abandoning their land in search of an economically stable future often find themselves without work, joining the ranks of Kenya's unemployed.

How would these changes affect a typical subsistence farming family in Kenya? Public Radio International (PRI) and the BBC World Service interviewed a farmer named Isaiah, who lives in the west of Kenya. On his one-acre farm, Isaiah grows maize for the family, as well as tea for export. While tea is Kenya's most profitable export crop, his yields and income have declined considerably lately because of soil depletion. Though the average fertility rate in Kenya is 4.38 children born per woman, many households include extended family members (CIA World Factbook). Isaiah must support eight people on a monthly income of about \$6 from his tea crop. He is also in debt because of the high cost of fertilizer. Exacerbating his financial dilemma is the Kenya Tea Development Agency, which provides some fertilizer to farmers but docks the cost, as well as transportation costs, from the money paid to smallholders for their tea. Isaiah lives with his whole family and a cow in a small hut with a tin roof and mud walls. An open cooking fire in the kitchen poses a fire and health hazard. The family is unprotected against deadly, insect-borne diseases such as malaria and dengue because they cannot afford mosquito nets. Lacking a better option, they draw untreated drinking water straight from the river. Isaiah knows the risk of illness, but he can only pray for his family's health because medical treatment is unbearably expensive. Ideally, he would like to send his children to school, as all primary education is free, but the required uniforms cost about \$3, nearly half of his monthly income. As a result, the children stay home and help out on the farm.

This is just one example of the escalating crisis of poverty and resource depletion in Kenya. In 2006, Kenya ranked 147th out of 182 countries in the United Nations Development Programme human development index, which measures a country's development based on life expectancy, access to education and standard of living (HDR). The BBC reports that of the 39.8 million Kenyans, half live on less than \$1 per day. 17 percent of children are malnourished (PRB). Yet, population growth in Kenya is a remarkable 2.69 percent (compared to 0.98 percent in the United States). This means that two Kenyan

children have been born each minute, or 124 children every hour, 2,976 every day, 20,833 every week and 83,333 every month - for the last ten years. As a result, nearly 43 percent of Kenyans are under 15 years of age (CIA World Factbook). Such a young demographic concentration does not bode well for the future when capacities to feed this generation and its offspring become stretched even tighter. Why is Kenya so poor and hungry? And are these problems insurmountable?

No. Kenya's problems may very well be solvable, as other countries have begun to overcome similar challenges. But in order to assess possible solutions, we need to better understand the barriers that keep these problems so entrenched. Two of the first barriers Kenya must overcome are unhindered population growth and fast-growing urban centers, which are inextricably linked. Kenya's population is expected to exceed 50 million by 2025 (PRB). Its overpopulation already leads to habitat destruction, pollution, and violent conflict over vanishing resources and disputed territory lines. The most acute symptom of the problem is food shortages. Food supplies are dwindling as people leave the countryside for the cities, causing Kenya to rely increasingly on foreign food aid. A drought in 2009 caused maize prices to rise by 130 percent and expanded the scope of emergency food distribution to 3.8 million hungry Kenyans ("WFP Seeks Aid").

Food aid is not a lasting solution to poverty and starvation. Building self-sufficiency is the only true pathway to eradicating poverty. Kenya has the potential to become food secure, but population growth must be reduced or else the environment will collapse under the human burden. As Lester Brown observed, "Since hunger is almost always the result of poverty, eradicating hunger depends on eradicating poverty. And where populations are outrunning their land and water resources, this depends on stabilizing population." (Brown 237) The wealthiest countries in the world, in which food is readily accessible, have the lowest rates of population growth. As Jeffrey Sachs points out, with enough money, a family can choose to have fewer children. Furthermore, with low child mortality rates in developed countries, having fewer children is a safe investment ("Addressing Hunger and Poverty"). Poor parents often don't connect the number of children they have with the increasing hunger crisis, because of their need for more labor. However, developing countries need to produce food through more efficient means to meet the overwhelming demand that already exists, and to anticipate future demand of an exponentially growing world population.

As important as agriculture is to Kenya's future, it is currently not a sufficient source of income for farmers. Three-quarters of Kenya's poor live in rural areas where they barely eke out a living through agriculture (IFAD). Because of artificially reduced prices of commodities from countries like the United States, many of these poor farmers simply can't support their families through agriculture anymore, and thus make the rural-urban move. Policy makers face a conundrum- how to maintain local and regional self-sufficiency through farming when the majority of the farming population can't adequately support itself. I propose a broad approach that addresses this challenge from three mutually reinforcing standpoints. First, agriculture needs to be made more profitable. This can be accomplished by increasing the efficiency and sustainability of agricultural systems in Kenya, principally in areas of extreme poverty. Educating farmers to adhere to better farming practices and to use new agricultural technologies to their advantage will boost farm production and therefore slow the trend of urbanization. Second, local and national policy, and the efficacy of policy-making infrastructure, must change to aid smallholders in achieving economic independence. Third, special focus must be taken to provide education and family planning services to women, who are often the bedrock of farm families.

Increasing Agricultural Productivity to Stimulate Self-Sufficiency

As in so many poor countries, rapid urbanization in Kenya is resulting in large slums and crowded living conditions. Slums increase the number of fires and epidemics from lack of proper sanitation. Slums are prone to unsafe drinking water and toxic contamination from nearby factories and dumps. High population density in urban areas leads to increased violence and crime, and high unemployment due to increasing competition for a limited number of jobs. But how does one convince Kenyans to remain on their farmland? One answer is to make farming more efficient, more productive, and finally, more sustainable.

Before farmland can be improved, the current trend of habitat loss in the natural environment must become one of habitat restoration. Desertification, overgrazing, and deforestation pose serious threats to natural ecosystems, as well as arable cropland. Developed countries can help Africans restore their environment. For example, the U.S. Agency for International Development has distributed 780,000 cookstoves that reduce reliance on firewood, thus freeing women from long trips to gather wood and reducing the rate of deforestation. In addition, Solar Cookers International started a project to dispense cheap solar cookers that require no firewood and can be used to pasteurize water. As for the threat of desertification, Kenya can adopt some of the emergency protective measures that Americans took in the Dust Bowl of the 1930s. For example, strip cropping (leaving alternating strips of farmland fallow) and tree planting (which reduces wind erosion and increases carbon sequestration) helped restore much of the American Midwest (Brown 194, 203-4).

The modern Western trifecta for increased land productivity is better fertilizer use, use of water irrigation, and higher-yield or drought-tolerant crops. Malawi demonstrated the efficacy of fertilizer when government-supported fertilizer subsidies caused corn production to rise from 1.2 million metric tons in 2005 to 2.7 million in 2006 and 3.4 million in 2007, according to the New York Times. Stanford University researchers proved that organic fertilizers pose less threat to the environment and to public health through groundwater contamination (Shwartz). Techniques that protect soil, such as strip cropping, tree planting, no-till farming, crop rotation, and the use of cover crops, work together to productivity. The use of overhead sprinklers and drip irrigation systems raises irrigation efficiency, reducing water use by 30 and 50 percent, respectively, as compared to traditional irrigation methods (Brown 223). Finally, drought-resistant and high-yield or hybrid varieties of crops are better adapted to the water scarcity becoming more prevalent in Kenya.

Increasing farm productivity is impossible without education and extension services. A benefit of urbanization is easy dissemination of information to all demographics of society. To bring education and farmer-to-farmer contact into the most hard-to-reach rural areas will require local and international assistance in the creation of farmer cooperatives and extension services. Finally, better infrastructure (roads, communication, etc.) is necessary for agriculture to reach a new level in Kenya. In summary, Kenya's fertile areas have a great underdeveloped agricultural potential that can be tapped through important systemic changes.

Improving the Efficacy of the Public Sector and of Agricultural Policy

Local governments and innovative public policy initiatives can help lift smallholders out of their destitution. Kenyans need to be guaranteed land to farm, through more equitable land distribution. They need government-supported seed and fertilizer subsidies and improved irrigation systems to ensure higher yields, in order to get struggling farmers on their feet. When their crops are ready to be sold, they need a market catered to their needs, a market that offers price controls in times of deficit and surplus. Finally, they need the ability to boost their incomes through infrastructure projects that build self-reliance, created

under micro-loans supported by the local government. Agriculture needs to become a priority for policy makers because it is integral to the health of the community.

Though Kenya is heavily dependent on foreign aid for its development, local leaders must ultimately drive policy change, with a focus on sustainable community development. Foreign help, especially from America, has not proved useful in altering the pervasive cycle of poverty. For example, in the last year, America sent \$136 million worth of food aid to Kenya but only spent \$36 million to equip Kenyans with the tools to grow their own food (Dugger). This is counterproductive to the Chinese saying “Give a man a fish, feed him for a day. Teach a man to fish, feed him for a lifetime”.

Kenya’s government needs to become more receptive to the people and their aspirations. As a democracy, it must engage them in the development and implementation of new policies, because the people know best how to better their lives. The framework of the national government should include these and similar policies to give legal force and validity to local legislation. Rallying for top-down, systemic policies from a localized, bottom-up approach is the most effective way to create policy change. As the presidents of Mali and Burkina Faso stated, which also holds true for Kenya, “Africa needs to be allowed to take its destiny into its own hands. Only self-reliance and economic growth and development will allow Africa to become a full member of the world community” (Touré and Compaoré).

Kenya, however, has rarely had an effective and transparent government. Jomo Kenyatta is credited with founding modern Kenya after its liberation from colonial powers in 1963. However, his democratic policies did not endure. Following his leadership, many years of a near dictatorship spurred violent insurrections and civil unrest. By the 21st century, it was clear that many of the positive results of the Kenyan government’s efforts (including the strongest economy in Eastern Africa and a free primary school system for all), were diminished by corruption and dishonesty, and often benefited the wealthy elites instead of those truly in need (Times Topic – Kenya).

Fortunately, Kenya has made some progress in integrating policies that build agricultural capacity and rural self-sufficiency. The Ministry of Agriculture states its vision as being “the leading agent toward the achievement of food security for all, employment creation, income generation and poverty reduction in Kenya.” This is a lofty goal toward which the Ministry is beginning to work. The Economic Recovery Strategy for Wealth and Employment Creation and the Strategy for Revitalizing Agriculture have caused agriculture to grow economically at a rate of 5.2 percent. The Strategic Plan aims to further accelerate agricultural productivity and reduce food insecurity by asking for \$122.8 billion to help accomplish the Vision 2030, which hopes to make Kenya a “globally competitive and prosperous country with a high quality of life by 2030”. The money will go toward a handful of objectives, including the formulation of constructive policies to improve market, credit, and loan access, agricultural output, fair land distribution, and environmental conservation (Ministry of Agriculture, Republic of Kenya).

A major barrier to more abundant and successful public policy initiatives is the corruption and dishonesty that pervades Kenya’s government. There is however, a growing movement as represented by UKaid, to create greater governmental transparency. UKaid proposes opening the actions of parliament to media, and therefore the world, by streaming meetings on television. This will also keep Kenyans informed as to what their government is doing for them, which is useful when demanding change. In addition, developed countries can provide help by financially supporting organizations that deal specifically in investigating corruption and graft, as well as funding Kenya’s public sector reform program, which works to streamline governmental operations (DFID).

Another key barrier is the lack of institutional infrastructure to implement new policies, monitor existing ones, and make necessary changes. It’s crucial to look for the most effective strategies before making a

policy choice that funnels large amounts of money into a fruitless development project. The solution isn't complex: go to the people who know from experience, the farmers. A democratic conversation with the people can identify areas of need, policy holes and potential solutions. How to reach the people? A first step is to improve access to the voting process and increase understanding of the significance of voting to self-sufficiency. Just as important, those in positions of power must physically come to the slums of Nairobi and the one-acre farms of the Great Rift Valley to talk in person to those they represent and to see the extent of the poverty and the factors that perpetuate it. Emerging farming cooperatives can be a natural source of feedback for policy makers.

Education to Reduce Population

Education is important on many levels for building capacity in developing countries, and especially important for women. The International Fund for Agricultural Development estimates that 70 percent of Kenyan women rely on agriculture as their primary source of income. Females head up to one-third of rural households, roughly 60 percent of which have no male support at all ("Kenya's Socio-economic Setting"). Since women are deprived of the same economic and social freedoms as men, education provides a greater opportunity to lift them out of poverty. Educated women can be more productive farmers- imagine the difference from illiteracy to the ability to understand the directions on a bag of fertilizer or a pamphlet on crop rotation and cover crops. Educated women can understand how diseases like HIV are spread and promote better health for themselves and their families. Finally, independent, educated women are more likely to have smaller families.

Information about family planning is crucial to reducing population growth and to improving the quality of life for many women, and there is a dire need for family planning information and services in the developing world. The UN estimates that "meeting the needs of the 201 million women who do not have access to effective contraception could each year prevent 52 million unwanted pregnancies, 22 million induced abortions, and 1.4 million infant deaths." (Brown 184) Furthermore, having fewer children leaves families with more financial resources for basic needs, including education and health care. Slowing population growth is a necessary step toward helping developing countries grow sustainably.

How have countries gone about reducing their population growth rates? Countries with strong authoritarian governments, such as China and India, decreased their exponential growth through top-down policies, like the "one-child" rule and forced sterilizations, respectively (NOVA). In Ethiopia, where an American organization broadcast a radio show on reproductive health and the education of girls, the average fertility rate in the region dropped from 5.4 to 4.3 (Brown 183-4). Clearly, the cultural climate of the country strongly influences its plan to slow population growth. In Kenya, the best approach is education, which provides a pathway to many benefits such as greater agricultural productivity and better health, as well as decreasing fertility rates. Developed countries can support Kenyans in becoming more literate, a foundation upon which Kenyans can build their self-sufficiency. School lunch programs lead to more enrollments in school, better academic performance, and a higher return rate. Girls in school marry later and have fewer children. Adult literacy programs and more family planning services are invaluable to an older generation lacking access to modern information (Brown 173). These are all positive trends that we as Americans can help support.

To some extent, the Kenyan government has recognized the economic and environmental harm of overpopulation, and has taken concrete efforts to slow growth in the last 30 years. Media campaigns encourage citizens to only have as many children as they have the resources to support (meaning "feed, clothe, and educate"). The government seeks to educate farmers on the details of contraception, because many hold fear and misperceptions, especially in rural areas. Though the implementation of family planning services is left up to NGOs and local efforts, Kenya has seen remarkable progress: fertility rates

of over eight children per woman in 1980 dropped to under five today (NOVA). American support for such services may prove more valuable to reduce food insecurity than any other outlet for our funds.

Conclusion

“Poverty is because the population utterly depends on agricultural production, so with a rapidly growing population, the land is not able to feed those people, and then, because of that poverty, they cannot improve the soil so the production is very minimal and that’s why we have all this coming up”, said Christine, a maize farmer in Kaimosi, Kenya (PRI). This incisive statement outlines the problem to which there exists a solution. Cutting exponential population growth will give Kenya’s natural resources a chance to support the human burden. Improving the quality of agriculture will increase the amount of food to fill starving stomachs and money to fill empty pockets. Implementing progressive policy decisions will continue the trend toward a higher quality of life for all Kenyans. These are tangible ways to break the pervasive cycle of poverty and hunger in Kenya, and to give farmers circumstances more conducive to survival.

The bottom line is there is no reason for Kenyans to be so destitute. Furthermore, it is unjustifiable for one in six people on Earth to need to struggle to survive on a day-to-day basis. We can feed the world right now with the technologies and financial resources available. With smart policies, better education, and a stable population, we can increase agricultural productivity to meet the needs of the 6.7 billion humans currently alive and the millions soon to be born.

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