

Kristen Reno
Sumner Fredericksburg High School
Sumner, IA
Kenya, Factor 9

Kenya: Cause and effects of water contamination on a country

Introduction of Kenya

Water is scarce. Yet, it is taken for granted, it is wasted, and even payed too much to drink it from little plastic bottles. Today, nearly one billion people do not have access to it that is the equivalent of 1 out of 8 people in the world. One of the greatest causes of poverty is the lack of access to clean drinking water. Without access to clean water you can't stay healthy, you aren't able to go to school, you can't keep working, you can't build housing, and lastly you can't grow food. Without clean water poverty is inevitable.

At the crack of dawn in Migori Kenya, a mother washes her daughters in the Nyamone Dam. A few hours later a wild boar walks into a lake to cool off and to get a drink. A while later a father and son fill their large plastic jugs for household use. A main water source for approximately 1,800 people is the Nyamone Dam. It is highly polluted due to the runoff from fields that drain into the dam. Kenya has been experiencing a drought for the past decade; some Kenyans have to travel between 10 to 24 miles to acquire water for their homes. The Kenyan government has tried to replicate the Nyamone dam by digging lakes and dams, but due to lack of sufficient funds and interest in building systems to purify the water have been unsuccessful. 41 percent of 39.8 million Kenyans do not have access to clean water.

Kenya lies across the equator and is located on the eastern side of Africa, along the Indian Ocean. Compared to its neighboring countries, Kenya has always been relatively stable country. 80 percent of the land is arid meaning lack of moisture, having insufficient rainfall to support trees or woody plants or the land is semi-arid which means to have a relatively low annual rainfall of 25 to 50 centimeters, and having mainly grasses and shrubs. The demographics for Kenya's population is relatively young, considering that 70% of their population is under the age of 30. In Kenya the life expectancy at birth is 45 years old. Kenya's population has grown from less than 3 million to 38 million in the past 80 years. It is estimated that the population will jump to 51.3 million in 17 years, and to 65 million by 2050. Roughly 66% of the population lives in rural areas, mostly in the fertile southern half of Kenya. There are roughly 70 tribal groups living in Kenya, therefore there are vast array of ethnic languages spoken in Kenya apart from English and Swahili. English is the official language, but Kiswahili is spoken by the majority of Kenyans.

A Subsistence Farm Family

The typical farming family lives on less than \$1 per day in Kenya. The typical family has 6 children. In 2006 101 million children – more than half of them girls- were not attending primary school; the majority of these children live in sub-Saharan Africa. In 2007 school expenses only allowed 25% of the elementary students to further their education by finishing high school. East Africa struggles to provide quality education infrastructure as indicated by student-to-teacher ratios, primary completion rates, secondary enrollment, and youth literacy rates.

The life expectancy for a woman was 51 years and 50 years for a man in 2006. It is expected to decrease even further due to the spreading of HIV/AIDS. Kenya's healthcare is under financed, thus making the population rely on donors if they want to receive healthcare. Kenyan's living rural areas are highly dependent on natural resources and the environment for their livelihoods. The living conditions in Kenya are not ideal due to the absence of electricity, clean water, proper sewage, and sanitation.

The Kenyan diet mainly consists of beans, carrots, tomatoes, maize cauliflower, beetroot, and cucumber. These are all very affordable to the average Kenyan and are easy to find. Meats consumed are beef, goat meat, chicken, and fish.

Agriculture creates over 80% of Kenya's jobs and generates 60% of the country's income. Traditionally, the Kenyan women, like other African countries, performed roles of wife, mother, child-bearer, caretaker, and food provider. Today, women have the most physical and backbreaking life in Kenya. They do the majority of the agriculture work, and yet they only earn a fraction of the income generated.

Agriculture in Kenya

Agriculture makes up three-fourths of Kenyan jobs, and yet less than 8% of the land is used for crop and feed production. Less than 20% of the land in Kenya is suitable for cultivation, of which only 12% is classified as high potential agricultural land and about 8% is medium potential land. The rest of the land is arid or semi-arid. (Kenya-Agriculture, par. 1) Small producers who cultivate no more than five acres using limited technology usually do the farming in Kenya.

Kenya is the world's largest producer and exporter of pyrethrum, a flower that contains a substance used in pesticides. (Kenya-Agriculture, par. 7) Other important crops are sugarcane, corn, wheat, rice, and cotton. Small holders grow most of the corn and also produce significant quantities of potatoes, beans, peas, sorghum, sweet potatoes, cassava, bananas, and oilseeds. (Kenya-Agriculture, par. 8)

Food and agriculture are the largest consumers of water, requiring one hundred times more than humans use for personal needs. Up to 70% of the water that is taken from rivers and groundwater goes into irrigation. (Use of Water, par. 1) Seeing that 70% of the water is used on food and agriculture, and Kenya has contaminated water. Where does that leave Kenya's crop production?

Causes of Kenya's water crisis

The causes of Kenya's water crisis are from droughts, forest degradation, poor management of water supply, water contamination, and population growth. Kenya has been experiencing a severe drought for the past decade. Global warming is a main factor that has increased the drought, causing millions of Kenyans to not be able to produce crops and keep their livestock alive. Since many Kenyans rely on agriculture directly or indirectly, when a drought occurs, many are left to starve.

Droughts have lengthened due to deforestation. The forests in Kenya distribute water to different lakes, and millions of people depend on it for a living. When farmers and loggers come in and destroy the forest for personal gain, it leads to increased water run off from those forests. Due to the increasing population and the country's increasing use of water for agriculture purposes have led to poor management of water. Actions taken have not been effective since the organizations managing water resources have failed in multiple ways. One of the main reasons for the worsening water crises in Kenya is the lack of ability to maintain clean water. A negative impact is also the high population growth. With an increased population growth water becomes scarce.

In Kenya only 19% of urban residents have access to proper sanitation, through hygiene and disposing of waste. Women are most affected by this. Women are responsible for providing water for their families. These women risk their health to collect contaminated water. Women will travel miles carrying 40-pound jugs on their back. It is estimated that women and children spend up to one-third of their day fetching water from the nearest water source.

Rainfall in Kenya has decreased in the past five years. More areas are unable to support livestock or unable to produce vegetation. This has caused families to move into cities. Women who were once able to cultivate land and earn a small income are now forced to live in slums.

Without clean water Kenya will continue to suffer. They are unable to grow crops, build housing, stay healthy, and stay in school to receive a proper education. When consuming unsanitary water there is a chance of epidemics spreading, if they are spread it hinders the physical health of the person who consumed it. This causes less energy and productivity to get an education, or to build housing. They are also unable to produce adequate food for themselves. The crops that receive contaminated water are unable to fully produce as high of a yield compared to crops that receive clean water. It's not just the crops not growing fully, in addition the Kenyans are becoming sick from this contaminated water. Clean water is a necessity for living a healthy life. Water borne diseases cause 10% of the deaths in Kenya. Consuming dirty water takes up a lot of a body's energy. Drinking contaminated water contains bacteria, which can cause a person to become very ill. In addition it can cause bad indigestion, which uses up a lot of energy. Without energy people can't be productive in their jobs, making it even harder to escape from poverty.

The water crisis in Kenya is a long-term issue. The government has made attempts to purify it by digging wells, but due to the rough, hard ground it makes it more or less impossible and not to mention costly. They also try to catch rain as it falls from the sky, but considering how many people need water it is not enough. By finding a way to sanitize the water, the families of Kenya would be able to produce sustainable crops to the full growing potential, allow livestock to live, and allow the Kenyans to not catch water borne diseases. Being able to produce crops and living livestock will allow the families to have a more reliable income and a plentiful food source. As for the Kenyans not catching water borne diseases this will be beneficial by allowing the children to go to school to get a proper education, and the adults will have sustainable energy to be more productive.

The weather has a major effect on the water crisis in Kenya. Kenya is seeing the worst drought in 60 years and does not receive optimal rainfall to the water basins. Rapid urbanization has pushed people into slums, where there is little to no water or sanitation, and overcrowding increases the already hazardous health conditions. Kenya's virtually bankrupt government does not have the funds to run the proper water systems and the existing piping systems are in ill repair.

Solutions

To improve the food security of Kenya through the water sanitation crisis I would recommend the Kenyans to become educated about proper ways to clean water, and proper sanitation practices. This would allow the Kenyans ample opportunity to produce crops and livestock by learning the proper way to purify the contaminated water. Once they become educated on the ideal clean water practices, another solution would be to grow crops through drip irrigation. Growing crops with drip irrigation would benefit the Kenyans because drip irrigation is an irrigation method that conserves water and fertilizer. Drip irrigation allows water to drip directly on the soil surface or the root zone. It would also be beneficial for the Kenyan government to become educated in making proper investments to benefit the citizens of Kenya. Lastly, I recommend investing in a full functioning well and piping system. More than 50% of water is lost due to leaks in the piping system so by fixing these leaks it would supply more water to people, crops, and livestock.

Recent steps have been taken to improve the water crisis in Kenya. There are multiple organizations taking steps to improve Kenya's education. The Help Kenya Project is one of the organizations trying to make an impact in Kenya. This organization is a New York based charity. Jude Ndambuki, a native Kenyan, founded this organization. The main goal of the Help Kenya Project is to alleviate poverty in

Kenya through education. It aims to help the children of Kenya by supplying them with computers, books, clothing, and other supplies. By supplying the children with a lasting education, it will better their future in finding jobs late in life. Another organization working to help Kenya is the water project. The water project is an organization that is constructing up-to-date wells in Kenya. They focus on putting wells in schools, churches, and community centers. The water project doesn't just construct the wells they also engage the community by training villages proper hygiene and sanitation.

Conclusion

Poverty is inevitable without clean water. Sanjay Wijesekera, the Chief of Water, Sanitation and Hygiene for UNICEF/New York states, "783 million people still do not have access to drinking water, and this is most basic human right." 1.8 billion people have gained access to improved sanitation, but the world still remains off track for the sanitation target.

Kenya has limited renewable water supply and is classified as a water scarce country. Due to the lack of proper infrastructure in Kenya through piping and sanitation, Kenya faces numerous challenges in working to combat the water and sanitation crisis. If Kenya is to survive, they will need to make changes. Kenya faces many challenges in water provisions due to the erratic weather patterns in the past few years causing water shortages and droughts. Investments in proper wells and piping systems along with knowledge will need to be learned in accomplishing this issue. Rural areas of Kenya are left without water and urban areas aren't much better, as Kenya's government does not have the funds to run pumping stations and existing piping systems are often leaking and in need of repair. Fortunately, there are a number of organizations willing to help the Kenyan government and communities, by providing water solutions and education. Since this crisis is not just in Kenya, there is so much to be done. Although the road to fixing the water and sanitation crisis is a long one, there are some simple ways to clean the water. The National Science Foundation has shown that by simply straining water through a clean cloth can reduce the spread of pathogens. Hopefully in the future the world will understand more about our water and sanitation issues. It will greatly depend on the way people look at it: public common or private commodity, tradable good or basic human right.

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