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Kenya: Increasing the access to safe water and having education on proper hygiene and food preparation techniques to reduce transmission of food and waterborne diseases.

Kenya is a developing country in East Africa known for its diverse wildlife and breath-taking national parks. Kenya is approximately the size of Texas with a population of 43,013,341. Kibera a slum in the capital city of Nairobi is one of the largest urban slums in Africa. Although Kibera is much smaller in area, it has a population of one million people. Kibera is considered to be the largest and poorest slum in Africa. One of the many problems that face Kibera today is scarcity of clean water and poor living conditions. Water in this slum is contaminated by human or animal waste that has pathogenic microorganisms leading to waterborne diseases. Some examples of these diseases are; malaria, diarrhea, cholera, yellow fever, dysentery and typhoid. Poor sanitation is also a major cause of these diseases, which revolves around inadequate access to safe clean water.

People from Kibera live in unhealthy and difficult conditions; overcrowding, criminal activity, filthy conditions, and dangerous lifestyles are the order of the day. The population of this slum is ever increasing with a typical family comprising of a wife, a husband, and three to six children living in an overcrowded shack. The husband is the main bread winner leaving every morning in search of menial work and the wife is left behind to do household chores. Nutrition is poor comprising of Ugali which is a popular dish in most Kenyan households. Ugali is made out of maize (white corn), high in carbohydrates and easily available and affordable. Due to the poor diet most children suffer from malnutrition and are very vulnerable to water borne diseases. Food purchases are made in the open-air markets whereby vendors have their shops by the roadways side by side with the other booths. Some vendors lay their products on the ground. They purchase grains, vegetables and fruits at an affordable price. Women of Kibera make Verticals Farms these are tall-poked sacks filled with dirt where they grow crops in different levels.

Not only is health care not available, it is not affordable to most of these residents. There is no social security system or health care, hospitals or government clinics do not deliver health care to the slum. This population is left at the mercy of a few charitable organizations like Wired International among many others. Only a small number can provide education for their children. Unlike America, High school education is not free in Kenya, parents send their children to boarding schools once they complete their elementary level. A small amount of kids are able to finish secondary school. Due to limited finances very few parents are able to send their children to school. Although most of these parents encourage their children to stay in school, this is always a struggle when it comes to financing their education. Another problem that faces the people of Kibera is little or no access to the basic needs such as electricity, clean water, toilet facility and sewage disposal. Kiberans purchase their water from water brokers by the liter at much higher prices than those in Nairobi city. Right now water is scarce, expensive, and contaminated in Kibera because it's outside the control of the Nairobi Water Company. On average water shortage occurs at least four times a week. During such periods water prices increase dramatically. Water prices rise due to a combination of political exclusion, the operation of water mafias, water rationing, and poor infrastructure (m-maji). Children and women can spend the whole day looking for water. If they don't find clean water they end up going to the local free yard tap, which is contaminated or unsafe for drinking. On a good day they will spend close to an hour fetching water.

According to Kelly Fenson with the Kibera foundation, describes life in the slum is hard. She relates her first expression of Kibera as overwhelming poverty with a dense population. Trash in the slum was piled high with no sewage removal system. She also noted the lack of running water and electricity, with an overpowering smell that she eventually got used to. To an outsider this can be overwhelming to think that people could be living in such awful conditions. Walking to multitudes of people living in huts made of tin, with no real doors or windows leaves one with such an impression. Kelly further expresses her amazement on how despite all these poverty the people were always happy and smiling. She could hear music playing all over and the children played without a care.

According to a different organization, Saving Children in the Slums of Kenya, it was noted that the further you walked through the streets of the slum, the conditions got worse and worse with trash piled higher. The more affluent live on the outside of the slums and the poorest live in the center of the slum. Women don't have a say on important issues. They are treated as property and given no opportunity to make decisions about their lives or bodies. Men are likely to be more educated than women. Only a small amount of girls get to go to school. Men are expected to get the leading jobs. Traditionally, men believe women can go off and marry a rich man and they are able to get the money they need. There are high rates of domestic violence, physical assaults and rape in the Kibera. Single mothers struggle the most, it is difficult but they manage. They find jobs like washing clothes to provide basic needs for their children. When things get out of hand, some women turn to prostitution to earn a living and to feed their families. About 66% of girls in Kibera trade sex for food; this begins as early as the age of six (Kibera Foundation). Kibera has low earning wages of less than a dollar a day. Women make their own jobs for survival. Kelly with the Kibera foundation explains about jobs and women.

“Most of the women did not have jobs, but we noticed a few tailoring businesses, and some women roasted nuts to sell, while a few other women braided and styled hair. I saw one woman making jewelry, but because slum residents live in such extreme poverty, making under a dollar a day to support an entire family of maybe six, the ability to buy craft materials is nearly non-existent. They can hardly afford to buy coal to cook with” (Fenson-Hood)

Factors that contribute in scarcity are deforestation, population explosion not conserving the water and poor management. Kenya is known as a country that is low of forest area. The forest cover had decreased by 8 % since the 2000s (African Politics Portal). The residents of Kibera do not conserve because they don't have the material such as reservoirs. The natural resources needed by the Kiberans are finite. People are misusing the resources. This is so because people are depending on the same resources and the population is exploding. The only focus mainly on survival and don't have the resources to make a better life (AMREF).

The combination of poor nutrition, malnutrition and lack of sanitation accounts for many illnesses and deaths. Lack of sanitation is world's cause of infection and diseases (Shining Hope for Communications.) Waste doesn't pump out of Kibera, most sewage runs downhill to ditches. The drains used by the residents don't flow well because they are made of dirt. This results in stagnation and pooling difficulties that breed insects and odor. Water-borne illnesses are a serious threat. People that live in the slums are at high risk of getting waterborne diseases. Statistics tell us that 1.6 million people, mostly children, die every year from disease related to unclean water and poor sanitation (Clean Water for All). Malaria, cholera and typhoid affect large proportion of Kibera. These diseases are caused by a lack of sanitation facilities in the slum. Sanitation in Kibera doesn't exist, there are open sewers carrying contaminated water. Cholera and typhoid can last for weeks and without treatment death occurs. Malaria is a severe problem in Kibera. Statistics show that more people die each year from malaria than AIDS or HIV and also every 30 seconds a young child dies due to malaria (UNICEF). Malaria is most deadly to children and the elderly. Cholera increases due to overcrowding and lack of sanitation.

Kibera is polluted by soot, human waste, rubbish, dust and other type of wastes. This is a major health threat. It's too congested to build toilets. Toilets are a low priority and considered as luxury in Kibera. Kiberans result in the use of flying toilets and pit latrines lack of sanitation facilities and sewers (Voices of Kibera). Flying toilet implicates a person defecating in a plastic bag and tossing it away during the night. There are open sewers filled with raw, stinking sewage. This shows poor hygiene practices. The pit latrines also known as outhouse are located by the river for easy discharge. A hole in the ground works as a latrine for up to 50 shacks (Wired International). Pit latrines are inadequate and fill up quickly. They are barely cleaned which leads to diseases. Young boys are employed to empty the latrines once they are full. The contents are taken to the river (Kibera.org). Five hundred to one thousand share the latrine per shack. In warm weather the stench is unbearable and when it rains, mud makes walking difficult. Rajab, the chairman of the Jolly Land self-help group, talks about good sanitation. He says good sanitation is the answer to all the problems in Kibera. He further explains how there is dirty water and poor sanitation which leads to diseases. With the new self help group he says the new water and sanitation facility will prevent diseases and stop the use of flying toilets.

Kibera is a desperate and impoverished urban slum. Poverty is an aspect of life in Kibera. Hygiene is chronically poor. According to BBC world, Kenya is a water scarce country. The kids don't shower every day and wear dirty clothes. Getting potable water is one of the hardest resources to secure. Statistics say that every 20 seconds a child dies from a preventable waterborne disease (GETF). Increase to safe, clean water is improving because different organizations are getting involved. A Nairobi-based group is working to bring clean affordable water to Kibera (CLP magazine). Kenya Water for Health Organization explains how there is no enough water supply, toilets, access roads, electricity and drainage. Therefore the people need clean and safer water. This organization helps by providing tanks with clean and safer water. Kipepeo organization creates opportunities for women struggling with their income; meeting their daily needs and providing for their families. Life Force Kiosk is another organization that provides purified water. AMREF has been improving living standards for Kiberans. Fifty-seven local laborers have been employed to build 323 latrines and 45 water points - helping to discourage the unhygienic custom of the "flying toilet" in which human waste is dumped on the ground in plastic bags. Instead of using plastic bags they are going to be using polythene bags made with chemicals to prevent the stench and turns human waste to a fertilizer (AMREF USA). AMREF has also improved conditions for water and sanitation. Shining Hope for Communities clean water project is building the largest water tower to access safe clean water. The Kibera Water and Sanitation Project say:

So many children in developing countries die before the age of five, and these poor children are dying from preventable causes like dehydration from diarrhea. It's just a lack of knowledge, information and practices that allow these deaths to happen. If the mothers can be taught to purify the drinking water, their children's lives will be saved. (Kibera Water and Sanitation Project)

Population growth will affect the factor of access to clean water by, if the population increases dramatically there is a higher risk of the water running out or contaminated. The water can get contaminated if the cemented area is being using by a large number of people and they don't clean up after themselves. To maintain cleanliness there should be different stations where the water comes from. Crime rate is going to increase when the population high. Henry Ndede, project leader for Nairobi River Basin Initiative, told BBC World that, "If we can improve the quality of our water we will improve productivity, reduce disease and health costs and see our economy improve." Surface waters in Kibera show high levels of pollution.

The recommendations that would solve the situation by 2015 would be providing fresh water to as many people through piped water and bore holes. Kibera a better Making place might have some roadblocks such as not having enough money to cover for everyone. The contributing organizations should construct

reservoirs for storing water in case the water runs out. They could also try irrigation schemes that will help with farming crops to get money from exporting the crops. The irrigation schemes will also help to get food for their daily life. With the money they can be able to live an affordable life. The government should come up with some initiatives which will make sure there is enough water no matter the circumstances. They should educate people meaning crime rates are going to decline. People are going to have their own money. A problem such as trading sex for food is going to diminish. Minimize overpopulation in the streets. Kids are going to be engaged in school activities rather than being in the streets. People can start small groups starting self-employment jobs. These jobs can be beading, weaving, carving, braiding hair, hand-made jewelry, and owning kiosks if there is good support.

Despite all the problems in Kibera there are good parts to them. Life is short and high in misery but people want to make something of their lives. People get to know other and get friendly according to Kelly Fenson-Hood. Everyone has a sense of community and everyone knows everybody. Women get together to braid each other's hair while watching their kids play. Kids in the Kibera are very independent. Most kids can do whatever they want and the older kids watch the younger kids. Fenson-Hood also says that she never saw a child cry and they always had a smile on their face. Kids keep themselves busy throughout the day and make toys with what they found.

In conclusion, we can say life in Kibera is getting better by the day, with the help of the many non-profit organizations that have stepped up in this community. It would be hard to for one to visiting Kibera for the first time to see how these conditions have changed because of the degree of poverty that still persist. This is only measurable in terms of the number of households that have access to clean water; more children are going to school, and a few clinics have been set up to offer health care to the residents of Kibera. Contrary to what was happening in the past whereby women were left out both the boy and girl child have been given an opportunity of going to school. Women have been taught about the dangers of unprotected sex and as a result are looking for alternative ways of supplementing their income through self- help projects that have been funded by the non-profit organizations. Following the guidelines given by the contributing organizations will improve the conditions of accessing water in Kibera and the overall quality of life

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