

Hannah Erlbacher  
Harlan Community High School  
Harlan, Iowa  
Ethiopia, Factor 9: Water and Sanitation

### **Ethiopia: Making Water, Stability, and Food Security a Reality**

The effects of the strenuous six-hour walk are apparent on the sun-lashed skin, ashy faces, and emaciated bodies of the women and children of rural Ethiopia. Pushing forward through the desolate land, the women and children walk to collect one vital resource, a small amount of water. The dry air and the sun assault the people and the barren land with whips of scorching heat. Unprotected and contaminated, a shallow pond awaits them as they continue the journey through dusty valleys and hills for this resource, a clear, tasteless liquid we so often take for granted. A mirage of this resource sits in the front of their minds and lingers on their chapped lips—a mirage of everything they do not have (“Ethiopia”).

#### Family Life

While walking the perilous journey home, the women’s backs ache from carrying the grimy, forty-pound jugs, and the children are dizzy from exhaustion. The living conditions of the rural people of Ethiopia are also devastating. Shared with immediate and extended family, one-room homes provide rural communities with shelter. On average, a rural household size consists of five people, and it is very common for three or more generations in the male line to live under one roof. These one-room homes can be made out of anything from sticks and canvas to plastics and animal hides. In other words, rural Ethiopians work with the materials that they have in the conditions that they endure. With this room being used for sleeping, cooking, and socializing, the conditions are cramped and stuffy. As it grows dark, the family lights candles due to the lack of electricity. Sitting around the mesob, a large basket used as a low table, they savor the sour inerja pancake covered in spicy wat stew, a common Ethiopian meal. Porridge, kitfo bread, and vegetables such as potatoes, carrots, and cabbage are passed around and divided among the family (“Federal”). Though these rural families are typically extremely poor, they remain positive and maintain strong family ties.

Ethiopia’s melting-pot-culture consists of numerous different ethnicities, religions, and languages. The simple farming lifestyle that has been the backbone of the economy for thousands of years seems to be the custom that connects all of the people. Over eighty-five percent of Ethiopians dwell in rural areas and either farm or raise livestock. Many of these rural farmers live settled lives and practice subsistence farming, growing only enough food to feed themselves and their families (Countries 22). According to *Water.org*, an American nonprofit developmental aid organization, “Ethiopia has experienced recurring droughts for the last twenty years followed by food shortages and famines” (“Water & Sanitation”). Due to recent droughts, food is scarce for the rural families, causing malnutrition issues and extreme poverty.

#### Education

In addition to the poverty-stricken living environment, education is also severely lacking in Ethiopia. Though Ethiopia has access to both primary and secondary school, enrollment rates for secondary school are dramatically low, and higher education rates are virtually nonexistent. Problems with dropouts and repeating classes cause children to regress in terms of an education (“Ethiopia”). Because Ethiopia has one of the lowest primary school rates and one of the highest illiteracy rates in the world, its rural enrollment rates would have to increase at an improbable rate to achieve the Millennium Development Goal Number 2, universal primary education, by 2015. One of the most prevalent factors contributing to disparities in school attendance is location. Primary-school-aged children in rural areas of Sub-Saharan Africa are twice as likely to be out of school compared to primary-school-aged children in urban areas due to the lack of access to schools. The percentage of students who completed primary education was under sixty-percent in 2011 (United 19-20). This means that less than six out of every ten primary school

children do not complete grades first through fifth or go on to secondary school.

Gender inequality is another monumental problem affecting education. Because women are not treated as equals to men, young girls are kept from receiving an education. In fact, only twenty-three percent of girls in Sub-Saharan Africa finish their primary education (United 19). Shiwele, a fifty-four year old Ethiopian woman and mother from Addis Ababa, believes, “Everybody should be able to educate their children.” She also affirms her desperation for a “free and complete world without discrimination, a place where there is equality between women and men, rich and poor” (“Ethiopia”). In rural Ethiopia, young children—especially young girls—are denied their right to an education because schools lack private and decent sanitation facilities. Additionally, household chores such as traveling miles for safe water also fall mostly to women and children. Because of these imperative responsibilities and sanitation barriers, young women and children are kept at home while they should be in school.

### Health

Like Shiwele and her family, countless Ethiopians become ill from unsanitary water and poor sanitation. During severe times of drought, water is scarce; springs and ponds dry up, and remaining water sources are defiled by waste. Washed into precious sources of water, dangerous waste products create breeding grounds for disease-carrying mosquitos (“Water & Sanitation”). The stagnant, filthy water also serves as a breeding ground for water-related diseases consisting of diarrhea, malaria, meningitis, typhoid, cholera, and yellow fever. Diarrhea, the second leading cause of death in children under five, is the most common consequence of unsanitary drinking water and poor sanitation. Bacteria and parasitic organisms in the water cause infections in the intestinal tract leading to severe dehydration, malnutrition, and eventual death. Malaria is another water-related disease caused by a parasite found in mosquitoes. Contaminated standing water serves as the perfect environment for disease-carrying mosquitos to breed and infect humans. Every year, between three hundred and five hundred million people contract malaria (“Water, Sanitation”). Exposure to human feces due to lack of proper sanitation facilities also contributes to the spread of disease. One gram of human feces can carry ten million viruses, one million bacteria, one thousand parasite cysts, and one hundred parasite eggs (“Water, Sanitation”). Because open defecation is a common practice in poor countries like Ethiopia, adults and young children are frequently exposed to disease-riddled environments. Consequently, the diseases relating to unclean water and inadequate sanitation take the life of a child every twenty-one seconds in Sub-Saharan Africa. In 2009, this number was every fifteen seconds (“Water & Sanitation”). Because of the lack of physicians in the nation, very few Ethiopians have access to medical care, allowing these diseases to wreak havoc on most of the population. As a result, life expectancy remains low, and infant and maternal mortality is extremely high. Like living conditions and education, disease is yet another factor brought about by water and sanitation issues.

### The Effects of Inadequate Water and Sanitation

Sadly, the lack of access to safe drinking water and proper sanitation plagues many countries around the world. According to the World Health Organization, the United Nation’s public health arm, 3.4 million people die every year due to water, sanitation, and hygiene issues with ninety-nine percent of those deaths occurring in developing countries like Ethiopia (Prüss-Üstün). Worldwide, 1.1 billion people lack access to safe drinking water, and 2.4 billion are without adequate sanitation. Ninety percent of those who die from these issues are children under five years old (Elimelech 3). These heartbreaking figures demonstrate the need for safe water, sanitation, and hygiene for poor communities all over the world. Ensuring appropriate access to safe drinking water and sufficient sanitation will improve the quality of life for the people of rural Ethiopia and the people of all countries struggling with these serious issues. As reported by Fred de Sam Lazaro, a regular PBS news contributor, “Three quarters of Ethiopia’s population do not have access to clean drinking water” (“Ethiopia”). Furthermore, with lack of access to water comes food shortages, extreme hunger, disease, and death. The issue of water is a double-edged sword; water is essential for survival, yet contaminated water is causing people to become ill.

We cannot fight malnutrition and hunger without tackling the water-related diseases that contribute to it. To solve this problem, we first need to know the definition. What does sanitation actually mean and why is it necessary? Sanitation is the safe collection, treatment, and disposal of waste; the education on proper hygiene and food preparation; and the focus on protecting Earth and its vital resources from contamination. So, how does this issue cause a typical Ethiopian rural family inadequate access to quality food? Unsafe, polluted water can enter into the food chain. For example, disease not only travels in drinking water polluted by waste, but it also travels through eating crops or fish that have been touched and contaminated by unsanitary water and human waste. Families cannot access adequate nutrition if sewage flows directly into the streams, rivers, and wetlands that they use as sources of food and water. Affecting land and marine ecosystems, unsanitary water taints the environment and exposes millions of people to disease by poisoning food.

Because sanitation problems are the most severe in rural populations, the lack of clean water directly affects rural families in Ethiopia. Rural populations are more destitute because the people usually rely on agriculture as their sole source of employment and grow only enough food to sustain themselves, leaving little money for necessities like proper toilets. Keria Salo, a mother living in a rural Ethiopian community, expresses her concerns for her children's health caused by insufficient sanitation and unclean water: "We're really desperate. We don't have the strength...my children are always getting ill, stomach aches, stomach aches, stomach aches" ("Ethiopia"). She says this after gathering water from a dirty puddle with other members of the community. Her children are home from school due to illness, yet she believes that the risk of drinking from a mud puddle is less than the risk of walking to get water. Due to rapes and attacks, many women are afraid to walk the desolate trails leading to the water supply but feel like it is their only option.

#### Present Status

Currently, water and sanitation problems in Ethiopia have been slowly improving, but the UN millennium goals for 2015 are far from being met. According to UNICEF, the statistics for improved global sanitation are not increasing at the rate in order to meet the sanitation target for 2015. Unfortunately, the least progress has been made in Sub-Saharan Africa, with Ethiopia only having twenty percent of the population with access to safe drinking water (Elimelech 8). The death rate for children under five years old is also the highest in Ethiopia out of any other country in Africa. Approximately two hundred out of one thousand children under the age of five die of water-related diseases each year (Elimelech 8). Without solving this core issue, the quality of life in Ethiopia will decline even further. Various organizations and charity groups have reached out to Ethiopia and other Sub-Saharan African countries, but many have not succeeded in correcting water and sanitation issues for the long term. Meselich Seyoum, a native of a rural Ethiopian community, is disappointed with the water aid in his area, "In most cases, those failures happened because there was no involvement of the community from the beginning," he describes. "There was this feeling of, we know what's good for the people...there was no ownership, and there was no capacity of the community, not knowing how to even manage the system, so that it can last for a longer period of time" ("Ethiopia"). The idea of installing working toilets seems simple, but human psychology is not simple. The Ethiopian people have never known proper sanitation or its importance. If the people are not educated on the importance of sanitation and do not accept its importance, then why would they stop practicing open defecation or drinking unclean water? These unsafe practices have become ingrained cultural patterns because the people have never known anything different. Ethiopia not only needs durable, long-lasting systems, but it also needs education, involvement, and understanding from the community for the systems to be successful.

#### The Benefits of Improving Water and Sanitation

By improving water and sanitation in Ethiopia, the cycle of poverty can be broken. With access to safe water, Ethiopia will gain food security and less crop loss. With less crop loss, hunger is reduced and

malnutrition is decreased. With an improvement in sanitation, the spread of disease would decrease, therefore, making malnutrition caused by diarrheal diseases decrease. Clean water and latrines would make it possible for children to go to school while providing new opportunities for young girls and women. With a waste management system, the environment would be a safe place, and the death and disease would be reduced. If we could alleviate these key issues, so many others could be eliminated.

#### Other Major Issues

In addition to being unsanitary, water in Ethiopia is also very scarce. Because of drought, water scarcity also has a huge impact on food production. Without water, people do not have a way to water crops. Therefore, providing food for the nation is becoming increasingly difficult. According to Mark Rosegrant, Director of the Environment and Production Technology Division at the International Food Policy Research Institute, "Agriculture, upon which a burgeoning population depends for food, is competing with industrial, household, and environmental uses for this scarce water supply...and developing new sources of water is getting more costly"(Rosegrant). The future for water and food is also highly uncertain due to uncontrollable factors such as climate and population growth. Factors such as these will affect the amount of available sanitary water for the people of rural Ethiopia.

#### A Solution

In order to solve the issues of water sanitation and lack of food security, creative and permanent systems must be installed. In addition to new, effective systems for gathering and cleaning water, the rural Ethiopian communities must be educated and properly taught how to protect themselves from disease. Practical Action, an international development agency, has developed solar-powered water pumps for the people in northern Kenya who, like Ethiopia, have suffered persistent periods of drought. Each well is drilled one-hundred-meters deep in order to reach a water source. Because Ethiopia has a plentiful supply of groundwater, accessing a source is a fairly simple task. The underground water pump can then draw clean water for up to twelve hours each day with the help of one natural resource, the overabundance of sunshine. Once the fresh water is stored, it can be connected to multiple taps and pumps throughout a village by a system of pipes, providing families with the clean water they desperately need while making water-related diseases an issue of the past (Practical). Without having to travel long distances, local villagers would be able to access fresh, clean water without putting their lives at risk. Due to its low maintenance, no fuel cost, unattended operation, easy installation, long life, and the abundance of groundwater in rural farming communities, this pump would serve as an extremely effective solution.

In addition to pumps, proper latrines need to be installed to provide an end to disease and unhygienic alternatives. The bio-latrines, another development of Practical Action, is a natural and effective way to solve sanitation problems while reducing the demand for water. Because the bio-latrines use a natural exhausting process, the system never overflows while the waste is used to make organic manure (Practical). The most amazing component of the bio-latrines is the ability for the capture and use of methane gas for lighting and cooking. Though building thousands of latrines would improve sanitation, installing them is only half the battle. In order for new systems to be successful, families need to be educated and involved in the process. With the participation and education pertaining to the care of the latrine and proper sanitation, the bio-latrines could be another permanent solution.

Organizations like Practical Action are the keys to improving water and sanitation issues because they use technology and innovative solutions to break the cycle of poverty while working closely with poor men and women around the world. Practical Action's purpose is to find out what the poor are doing and help them do it better by building on their own skills and knowledge (Practical). In order to deliver its work to poor countries, Practical Action relies on donations from individuals, non-governmental organizations, and the governments of the countries themselves. Because Practical Action sets up offices in each developing country in which they work, the money from non-governmental sources needed to fund the projects goes directly to those offices rather than through the country's government, insuring the proper

spending of that money. The organization also works directly with communities to not only install new technologies but to also instill new practices which can be a tremendous obstacle. Because of this, poor communities are more willing to use and accept the new systems put in place. With participation and acceptance from the community and funding contributions from the Ethiopian government, the bio-latrines and solar-powered pump could be the solutions needed to start the movement towards improved water and sanitation.

Another extremely vital step to improving water and sanitation is the access to education through the schools in Ethiopia. Along with the installation of proper latrines in school, children must be taught the importance of sanitation in order to promote a behavioral change within families and communities. These children are also future parents who will pass on learned practices to their own children. The benefits for investing in sanitation and hygiene education are extensive and momentous; by empowering and enlightening children, the people of Ethiopia will be able to make decisions to improve their health and quality of life. Moreover, the people need to be involved and in charge of changing their own destinies.

### Conclusion

Globally, progress needs to be made in order to improve water and sanitation in struggling countries such as Ethiopia. Ingenious technologies can be made available, but without the political will and leadership, necessary investments will not be made to implement much needed reforms. The roles of the Ethiopian government and other non-governmental organizations like Practical Action are just as important as the role of the people of Ethiopia. By studying their way of life and listening to their ideas, new ways of thinking can be developed. The people of Ethiopia—the small families, the young children, and the women who are treated as less than equals—are the keys to implementing systems that will improve their own quality of life. Ending hunger in our lifetime is something we must do and something we are obligated to do for our fellow human beings. It is our obligation to help the two billion people who will suffer from food insecurity and the 3.4 million who will die from water and sanitation related causes this year (Prüss-Üstün). By uniting and using our talents, this mirage of water, stability, and food security can become a reality for the people of rural Ethiopia and for the poor around the globe.

### Works Cited

- Elimelech, Menachem. "Water, Sanitation, and Health in Developing Countries." n.d. PDF file.
- "Federal Democratic Republic of Ethiopia." CultureGrams World Edition. ProQuest, n.d. Web. 24 Oct. 2013.
- "In Ethiopia, a Daily Struggle for Clean Water." Interview by Fred De Sam Lazaro. PBS. MacNeil/Lehrer Productions., 18 Mar. 2010. Web. 27 Oct. 2013.
- Practical Action. Practical Action, n.d. Web. 6 Nov. 2013.
- Prüss-Üstün, Annette, et al. "Safer Water, Better Health: Costs, Benefits, and Sustainability of Interventions to Protect and Promote Health." 2008. PDF file.
- Rosegrant, Mark W., Ximing Cai, and Sarah A. Cline. *World Water and Food to 2025: Dealing with Scarcity*. Washington D.C.: Intl Food Policy Res Inst, 2001. PDF file.
- United Nations, comp. *The Millennium Development Goals Report*. New York: Statistics Division of the United Nations Department of Economic and Social Affairs, 2014. PDF file.
- "Water, Sanitation and Hygiene." UNICEF. UNICEF, 29 May 2013. Web. 28 Oct. 2013.

"The Water & Sanitation Crisis." Water.org. Water.org, n.d. Web. 4 Nov. 2013.