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Mali, Factor 2: Water Scarcity
Mali: A Future in Reach

“Unlike curing cancer or heart disease, we already know how to beat hunger: food.” This famous quote by Mario Batal is so easy for the people living in the United States to comprehend, but what about those underdeveloped countries that have very little access to the important nutritional needs such as food and water. Poverty, economic and political conflicts, and climate changes all play major roles in the cause of unstable third world countries. Action is taken every day to try and change the economic struggles of these countries. Bright futures in some can be seen, but not without major help from fortunate countries and willing people.

The major problem with world hunger is not the fact that the world does not make enough food, but these underdeveloped places do not have the proper, fertile land to farm on or the appropriate income to purchase an adequate amount of food. Malnutrition is prevalent and over half of the countries children are stunted. Mali, a landlocked country that is mainly located within the Sahara desert, is today one of the poorest countries in the world with 70 percent of its 11 million population living under the poverty line. At least 80 percent of humanity lives on less than 10 dollars a day. (Global Issues, 2014) Amazingly the majority of people in Mali manage to live on less than a dollar a day. It is time that America stands and tries to find an everlasting solution to the instability in this country.

Imagine supporting a family with very little food and a small amount of water. On average a family in Mali houses up to seven kids per woman, this is more than any other average in the world. Like its neighboring country, Niger, a man can have up to 4 wives, if he treats them equally. This makes the average family size enlarge even more. It is a belief in Mali that large families are especially good, but instead of having your children all within a few years, space them out rather than restricting your overall size. The people see this as the best technique to provide for themselves in the future. This has helped some with overpopulation, but there is still a lack of resources needed to provide for each of these large families.

Education in Mali is provided and compulsory for nine years between ages 7 and 16. However the countries primary school enrollment is low, due to the fact that families cannot afford the cost of books, supplies, and other fees required to attend public school. The literacy rate in adults is extremely low, among the lowest in all of Africa. Only 27 percent of the population overall are educated and female education is as low as 12 percent. Lack of education affects every bit of the poor situation Mali is in. The government of Mali plans to invest and expand secondary and primary education to meet at least the Secondary School requirements.

Education affects the availability of trained medical professionals. Physicians in Mali are rare. Only 1 medical physician is available per 10,000 people. (Poverty & Healthcare, 2014) Lack of trained medical professionals means a very low life expectancy average and extremely high rates of illness and mortality. These illnesses are caused by many things such as lack of sanitation and little knowledge of personal hygiene. Medical facilities are limited and the few available lack proper equipment and technology for the high level of nutritional emergencies Mali faces.

Mortality rates are high because of malnutrition throughout pregnancy. The greater part of Mali makes do with one meager meal a day, consisting of milk, sorghum, millet, and cassava. The millet is pounded into flour by the women of the house and then made into a paste or stiff porridge. Families are dependent upon what animals they have and the milk they provide. Meat and milk from cattle is the top of the agricultural

products, but sheep and goat milk is also ordinary. However, this milk is not enough to supply such large families. Two-thirds of the country's population is involved in subsistence farming, depending on this to provide for their families.

Increasing desertification due to the drought and overgrazing of herds threaten Mali making what little arable land there impossible to farm on. This is known as an agricultural drought. The soil is corrupted, the fertilizers used to make attempts to grow crops have little results, and the seed quality that is available is exceedingly poor. This is driving large amounts of families that depend on farming and agriculture into complete and extreme poverty. Lack of food is such an issue in this country, but how can you fix this without a good and plentiful source of healthy water.

Constant droughts occur making it almost impractical for a family to access the amount of water and food needed each day. The ever increasing population is adding to the stress of finding and accessing water. Only half of the population in Mali has access to safe drinking water. It causes water related diseases such as bilharzias and schistosomiasis. Mainly children suffer from dehydration. This adds to the high illness rates in Mali. There is 100 times more ground water located underneath the desert than the amount of food on its surface. Accessing this water has been attempted on large scales but often fails because of fuel costs and logistics problems. Researchers believe that accessing the water on small scales using hand pumps will be more effective. This will require educating Mali's people on proper maintenance in order to keep the pumps working. Eastern areas receive only around two centimeters of rain each year, but the rest of the countries rainfall average differs in large, unusual numbers. Some year's plentiful amounts fall while other years extreme droughts take over. This is such unpredictable weather that the people need to take notice and save water for those years when droughts are prevalent.

A few organizations have recognized this as a concern in Mali and are starting to help meet the countries needs. The WaterAid association out of the United Kingdom has tried to make water more available by constructing communal tapstands and repairing water sources when and where it is necessary. The organization is educating villages on how to keep community wells from contamination and the importance of personal hygiene. Canada has supplied parts of Mali with food to create a temporary solution until the country can provide crops and plentiful water for themselves. Mali's development has improved but is not even close to being out of the depth of poverty.

The task of water conservation would be extremely expensive to try and accomplish on large levels, but little actions can be taken in individual homes to slowly improve the amount of water available. Local wells are available in some areas, but many times not sanitary, reducing the amount of water on hand. Repairs can be made to the already standing community wells. Sanitary procedures can be done to cleanse the water that is available. Families will have to start saving what little water they can, to farm with, to drink, and to use for hygienic reasons.

Water can be purified with many easy and inexpensive methods. Your traditional boiling technique will work especially in Mali's case when desperate times call for desperate measures. This will kill most bacteria and cut down on risk of water borne diseases. Purification tablets can be sent to Mali to use in their water, however pregnant women should not use these. Any way of improving sanitation will also increase the amount of available water and reduce the amount of diseases. Measures can be taken to improve the water sanity that will help Mali's future development.

Even though rain is rare and scarce in Mali, what little that falls can be saved. Large water barrels or plastic trash cans can be set up around individual houses. Used barrels will work as long as no oil, pesticides, or any other toxic chemicals have formally been in the barrel. Placing the barrels in runoff zones will help catch the maximum amount to rainwater possible. Theses barrels will have to be covered when it is not raining to keep mosquitoes and other insects out and away from the clean water. .

Mosquitoes will cause water related diseases like Cholera and Malaria. To add to that the water will need to be purified or filtered before drinking. The boiling method will work in this situation also. Another inexpensive method could be to strain the water through a light fabric material such as a bandana in order to remove any debris or sediments. (Twenty-Four Methods to Purify Water, 2014) If barrels are not accessible then families can use household containers like pots, pans, or bowls. With the help of other countries water filters can be purchased for communities in order to help increase the purification of any water. Families and villages can use this water for everyday use. It may not provide much but any amount of water will help with Mali's current situation.

Creative solutions can be made in order to water small gardens or potted plants. A rain chain which acts like a gutter will help supply crops with necessary water. Any size chain can be hung above a cup, bucket, or watering can. When water or rain falls it will drip down the chain into your container and you can use the water to water your garden. Then the water from your rain barrel can be used for other necessary matters. Rain chains will help families easily provide water towards their small gardens. Another solution that acts a lot like a rain chain would be a rainwater garden. By placing gardens in runoff zones, the gardens can easily acquire plenty of the needed water. (Gardening & Outdoor, 2014) There are many small solutions in order to conserve and save water.

Mali is in desperate need of water and food to provide for each other and their families. It's our time to step in a make a difference, even if it is in the smallest way possible. Safe ways to conserve and sanitize water could change the way a family lives forever. Actions can be taken to improve not only the amount of water but the sanitation also. Once water can be safely and adequately provided then Mali can take another step forward and begin irrigating their farms the necessary way. Families won't have to worry about bacterial infections caused from water, and for once Mali can come together and put poverty behind them. Time will show the way to this country, but with the right people caring Mali can adapt to the droughts and the increasing desertification.

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