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Madagascar, Factor Six: Sustainable Agriculture

Madagascar: Implementing Water Resources for Crop Production

In the world today, we move at a rapid pace that is constantly active and changing. Many Americans concern themselves with what they will watch on TV that evening, rather than the large percentage of the world's population who worries if they will have dinner that night. In Madagascar, seventy-seven percent of the population lives under the internationally set poverty line ("Sustainable Development"). This makes their concerns quite different than that of the average Americans. Madagascar has currently dealt with cyclones and droughts along with the struggles of any third-world country. It is very crucial to the sustainability of the world that we develop a consistent and strategic method of growing, distributing food throughout the world. Most people are unaware that by 2050 we will have nine billion people on the planet to feed, this is a substantial amount more than what we are currently dealing with. With the production rates of food currently, one in nine people do not have enough food to maintain a healthy diet ("Sustainable Development"). This brings the question of how we will feed the nine, the answer to this question lies in our generation's hands'.

Large families are extremely common in Madagascar, and it is also common for these big families to live in one to two bedroom houses composed of mud. Eighty percent of the population has small scale plots for farming, and some live by the sea fishing for food ("Food & Daily Life"). The average family suffers from absolute poverty, making around 75ar a day equal to 1.25USD. The currency ar is Malagasy ariary currency. Many families are considered rural because there are few towns and sometimes it is miles that separate families from the nearest town. The main crop grown on the small scale plots, and larger fields is rice. Although rice is most common crop grown there, they also grow sugarcane, sweet potatoes, potatoes, bananas, corn and oranges ("Madagascar - Agriculture").

With more than seventy-five percent of the population living in the bush, it can be very complicated to try and continue education for children ("La Salette Missionaries". A growing concern for the children of Madagascar is suffering from stunting, this is due to chronic malnutrition. Nearly fifty percent of the children in Madagascar suffer from some form of this ("Madagascar | WFP "). There are only 3,150 doctors in Madagascar, which comes around to 1.6 doctors for every 10,000 people. Access to health care is not readily available nor common, this can make things complicated when outbreaks of tuberculosis and malaria are common ("Education").

One of the biggest setbacks Madagascar faces currently is the cyclones, and droughts. This is a very complex setback because they could be faced with too much or too little of water. This is a large part of the food security problem because it both cyclones, and droughts can affect the crops ("Madagascar - Agriculture"). Other setbacks Madagascar faces are education, and politics. With five years of political struggles, they have had major economic setbacks making it more complicated to receive help after one of their many natural disasters, this also has caused a lot of financial troubles between education and even providing for their families ("Education"). Of every one hundred school students only around sixty complete primary school. Only seven percent of preschool age students were in preschool. Even though the numbers have become higher the poverty level continues to rise, making education a lower priority ("Education").

A large population of Madagascar depends on agriculture as a source of income, as well as food. The main export that Madagascar produces is coffee, followed by vanilla. Many farmers produce the food for their family, and the staple food in their diet is rice ("Madagascar - Agriculture"). More commonly than not,

farmers lose what little crop they have due to the cyclones or droughts ("Madagascar | WFP |.") Since the main diet in the average Madagascar person's life is rice, it is uncommon for them to eat a lot of meat as it is not always available ("Impact of Malnutrition").

The need for adequate food continues to grow because the rate of children suffering from chronic malnutrition is rising, The population continues to increase at an extremely fast rate also therefore their current need is lower than what they will need in the future ("Madagascar - Agriculture"). The effects of malnutrition are irreversible, and when the people of Madagascar suffer from this it can make them more susceptible to infection. With the shortage of doctors, this can make death a likely outcome. Lack of medical care at birth has also caused problems for children and has shown the effects by a shorter life expectancy ("Impact of Malnutrition").

The magnitude of a cyclone can vary. They are super powerful ones can affect anything from houses, forests, to the crops. Less powerful cyclones can cause minor to severe flooding. These powerful storms can ruin some families only source of income. They can also take away coastal homes. With their homes and crops being the two things they rely on most, cyclones can be catastrophic to the wellbeing and survival of a family. With the cyclones capability to claim the homes and jobs of civilians, this can be devastating to the country as a whole ("Madagascar | WFP ").

Droughts however can affect the rural families' freshwater source, as well as, killing their crops. Droughts can be short as a week, but can go as far as months without rain. This can cause a constant fear for Madagascar's farmers. Droughts can make rural families struggle to find water much harder, when they last longer than a couple weeks ("Madagascar | WFP |").

There are two possible solutions for the problems created by the cyclones. The first is applying the use of terraces. This would help control and regulate water to the crops, causing just enough and not too much. Terraces are the buildup of dirt in the high points of the land being planted. These terraces are created to slow down the movement of water, with excessive rain and strong winds this can help move the water enough to make sure that the crops do not flood. Terraces can be built with anything from a bulldozer to a blade. Terraces can benefit crops not only for water maintenance, but for stronger land for the crops to go ("Madagascar - Agriculture").

When there is a drought the most beneficial technique for them would be to create irrigation systems, this can be very expensive cost wise, but could help eliminate plant loss due to droughts. This can be very expensive because it can require lots of piping to get the water to where it needs to be. This also can also be costly if there is not a larger nearby water source to pipe from. ("Madagascar - Agriculture"). In those circumstances, they would create a large pond to pull water from, this can also be pricy. Irrigation systems are a rather new system to the agricultural world, they are an above ground system that disperse even amounts of water to all areas within the radius. The great factor about irrigation systems is that it can control the amount of water applied to the crops. If it happens to be a rainy year, they can apply them less or a very dry year they can apply more. The systems can help prevent plant death due to drought. ("Sustainable Development and Conservation, Madagascar").

The second and more realistic solution would be the support of other countries and nations guiding these farmers by teaching them how to increase their yields, how to build terraces, and how to create simple irrigation systems ("Madagascar - Agriculture"). With the education Madagascar farmers can receive from more successful farmers with these conditions, they could change the way Madagascar farms. With the knowledge from these farmers, also helps them gain experience in their personal farms. With future generations they will be able to teach the proper and strongest techniques to continue to grow as a whole.

They can also find support by reaching out to certain organizations and possibly receive funding from them. The funding could benefit everyone in a multitude of ways. This could help by purchasing the resources needed to develop an irrigation system. It could also purchase the equipment needed to build terraces to help control the distribution of the water. It could also help gain connections with successful farmers, possibly teaching the Madagascar farmers the methods that would help them gain higher yields and how to possibly maintain the water supply to benefit yields. Other options could be anything from grants or donations to help go towards irrigation equipment, or the other equipment to help develop the terraces.

Two organizations that are available to help fund improvements would be the Bill Gates Foundation and the International Fund for Agricultural Development. The Bill Gates Foundation has over 200 million dollars in agricultural grants, with these grants they have been able to train over 10,000 people to educate them to on how to grow, helped support the release of drought resistant corn, and delivered vaccines to livestock throughout the world. ("Helping Poor Farmers, Changes Needed to Feed 1 Billion Hungry | Bill & Melinda Gates Foundation") The International Fund for Agricultural Development provides training to local farmers to help improve practices, and trains the business side of things to ensure the profit is provided to them as well. ("Investing in Rural People in Madagascar"). The IFAD focuses not only teaching farming techniques, but also improving their quality of life.

In conclusion, the benefits of implementing water resources to counteract droughts would not be evident right away, but the effects would continue to increase as the years pass. Developing and maintaining these techniques could go a long way for Madagascar. The benefits of this go beyond just ensuring families being fed. It also has financial benefits. Families often worry if they will have enough money to eat or to live and they also worry about paying for education for their children. When Madagascar begins to develop new methods to increase their crops it will improve the economic stature remarkably, which will create more exports to other countries, more jobs and more income to feed their families. The creation of jobs will not only improve their country, but it will also gain the satisfaction of being able to provide for their families. Growth is essential to the development of this country, to maintain economic stature and to benefit future generations. The benefits of implementing these techniques will bring a new sense of life and hope to those who have been devastated time and time again. Water is an essential part of this world, and a very contributing part of Madagascar's problems currently. If Madagascar did choose to implement water to benefit them, it would change their country as they know it. Changing Madagascar could be the first step in changing the world.

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