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Kiribati, Factor 5: Climate Volatility

Surviving Climate Volatility on Kiribati

Introduction

Kiribati is an island nation in the central Pacific Ocean that consists of 21 inhabited islands. It has a population of about 100,000 people (Kiribati, Culture). Most of these people are native to the island and have direct connections to their ancestors who settled the area. Due to the rising waters caused by climate change, this island is going to sink below sea level. If the waters continue to rise at the same speed, all of Kiribati's mainland will be engulfed by the Pacific Ocean. These rising waters are destroying farmland, and depriving natives from a quality life. Fishing is also being threatened due to the rising surface temperatures of the ocean. These rising temperatures can cause an event known as coral bleaching. This causes an eventual reef collapse and essentially the death of all fish that have inhabited it.

The only way for the people of Kiribati to survive long-term is to evacuate the island. The water levels rising are inevitable. The United Nations has already started planning to evacuate the country, and even the government in Kiribati has purchased land in Fiji to move the islanders to. It's a severe situation -- a crisis that needs more attention and funding from the United Nations. This, however, will take time to implement. So while the international community works to assist Kiribati with its evacuation plan, agricultural production in the nation must be increased. This allows for management of food such as produce. In addition, the islanders need to increase the number of kelp and seaweed farms. These quick-growing and nutrient-filled plants are perfect for the natives to use.

Background/Problem

Kiribati is one of the most underdeveloped countries in the world. It has very limited access to resources because of its remote central Pacific Ocean location. The closest continent is Australia at about 5,000 miles away (Kiribati, Culture).

The family life in Kiribati is extraordinarily rough and can be filled with fear. During a speech on the condition of Kiribati, the country's president said, "In Kiribati many young people go to sleep each night fearing what will happen to their homes overnight especially during the high tides." The continually rising tide due to a global rise in ocean levels is a source of constant worry. Families are extremely poor and are constantly moving further and further inland, trying to escape the tide. The country's economy consists of the buying and selling of the produce farmers and fishermen get. During high tide, most crops start to wash away. Also, as more land in Kiribati becomes covered by water, the coral reefs surrounding the islands are also more at risk, which affects the fish population.

Average Life/Health

The life expectancy in Kiribati is extremely low due to the high chance of illness in the area. Most people are only expected to live to the age of 70 (Kiribati, Culture). That is very low when compared with other prosperous nations. Common diseases are tuberculosis, hepatitis B, and liver cancer, due to heavy alcohol use.

Other diseases are found in the water and the air. A lot of water is dirty in Kiribati. If it is boiled it still ends up dirty from the dust and salt in the air. Even the water they catch off their roof is still dirty from the dust on the roof. Airborne diseases are prevalent during the summer when the flu arises, including the H1N1 virus.

Unfortunately, professional medical help is very scarce there. The newest hospital was created on the island of Tarawa in 1992. Health care is free but often times there are no supplies to complete surgeries or any type of treatment. Luckily for the islanders, many ancient remedies have been passed on through families and continue to be used today (Kiribati, Culture). Childbirth, for example, is most commonly done at home, and not at a hospital.

Family Life and Work

Work in Kiribati is divided specifically by gender. Men tend to do a lot of the fishing and carrying heavy weight; the women do more work around the house and care for the family. Women do not have as many rights as they do in America. There is clearly a status in the household where the eldest male will be fully in charge unless they are too elderly to work (Kiribati, Culture).

Children in Kiribati are very respectful and know that tantrums are not tolerated by their elders. At about the age of 6 kids begin schooling. Schooling is very important to the natives there, known as I-Kiribati. Achieving a higher education is a means of a higher income job and the natives know this. Around the age of 9, kids are expected to work around the house.

Though the men are traditionally in charge of the household, the ability of men to provide food for a family is nullified because of the continual rising tide that destroys all farmland. There are few jobs. Jobs in Kiribati mainly consist of odd jobs, whatever they can do to feed and provide for their own families. There are few corporations in Kiribati and much of the trade consists of food coming from Australia and New Zealand. Food coming in from New Zealand are often very unhealthy, usually SPAM and other artificial meals (Kiribati, Culture). This is the reason for a high obesity rate among lot of native I-Kiribati.

Culture in Kiribati may also be starting to waste away. With every day, more and more land is engulfed by water and many worship centers have been surrounded by water (Kiribati, Culture). In Kiribati culture is extremely important to them. Moving to a more western society such as Fiji will uproot the system of maneaba. This is a system in which the leaders of a village will meet together to make important decisions and decide how resources will be distributed throughout their community. "A western society is pretty much an individual kind of existence", says a former president of Kiribati. An individual existence is the polar opposite of what most I-Kiribati are used to. Having their culture ripped away from them will be hard to cope with.

Solution

The evacuation of Kiribati is much harder to put into action that it seems. This is because of the heavily cultured communities all throughout the islands. The I-Kiribati do not want to leave their homes due to sentimental values. Due to this an evacuation cannot quickly take place. So, Kiribati needs a way to produce food quickly and efficiently. The country needs a system that is able to adapt to the rising tide. Improving the existing aquaculture and increasing production is the best solution for the natives. The key to helping the nation is to encourage citizens to help out with the effort. As well as just encouragement there needs to be public action taken by government officials to make sure that the citizens of Kiribati are willing to incorporate the farms and do not try and ignore the inevitability of evacuation. Each family has a role or a *kainga*, in their community (National Geographic). Some families would have to take on new roles that involve monitoring the new farms. This would help the new technology work its way into the I-Kiribati culture.

Self Generation kelp farms are extremely efficient and allow for the natives to produce crops quickly. It only takes about three months for seaweed to reach 9-12 meters in length (Ocean Approved). By creating more of these farms, natural habitats for mussels and other fish will also be created. All of these are good

food sources and sustainable. An international organization such as the United Nations would need to provide the money and labor to support this effort.

Creating more of these farms is another way to create jobs as well. For each farm, multiple jobs will be needed to maintain it. Also, new skills will have to be developed by the islanders who don't already know how to do it. It is very different than their traditional way of farming and fishing.

Another solution is to create floating farms. These farms that will be placed onto the saltwater are built from sod and wood. Rope ties or weights would be used to make sure that these farms did not float away. These are similar to the floating farms used in ancient Tenochtitlan. These floating farms, however, would use a modern irrigation system called dRHS (Wired UK). This irrigation system filters even the dirtiest waste water. It has proven effective in filtering salt water. The types of plants that grow the most effectively using these filters are tomatoes, radishes, strawberries, and beans. There is no concern about overwatering because the irrigation system goes directly to the plant's roots. The pipes make it so the plants only take as much water as they need for the time being. These pipes have received international recognition and are now being used in Chile, Libya, and Tanzania.

A third solution is a different type of floating farm: a farm on a barge. Floating farm barges would have three floors to them. The first floor consists of a fish farm. The second level consists of hydroponic organic crops. Lastly, the third floor is comprised of solar panels to maintain power throughout all of the barges. Waste-water that is not used on the second floor will be used on the bottom floor as food for the fish. Again, the dRHS irrigation system could be used.

Finally, a massive funding effort must be undertaken to handle this crisis. Money for more agricultural production could quickly be directed to Kiribati through international sources such as the United Nations and World Bank. Private money from companies interested in battling global hunger such as John Deere could be approached, too.

Conclusion

In conclusion, Kiribati is a nation in peril. It is inevitable that the island will sink by 2070. The only viable solution for people to survive is to leave it. Plans have already been put into place by the Kiribati government and they have bought land in Fiji to accommodate their arrival. All solutions to increase agricultural levels will be only temporary, however these solutions will make sure the quality of life is improved until an evacuation can be completed.

There are three main solutions that have the potential to work and effectively produce crops for the country. First there would be more production from seaweed farms. If there are more farms, there is more produce. The second way is floating farms that use dRHS filters to filter the salt out of the saltwater (Wired UK). These farms would produce a variety of nutritious produce. The third solution is to create a three-floor barge that can sustain itself. The first floor has a fishery, the second floor has a farm, and the third floor is full of solar panels that power the whole barge. All of this, however, is dependent on funding from either international government organizations such as the United Nations or private companies.

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