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Thailand, Water Scarcity

Thailand's Water Scarcity, The Impact, and Solutions

While Thailand might seem like a beautiful place to visit, the people who live there are currently going through extreme struggles. The country and families of Thailand have many interesting factors that contribute to what Thailand is as a whole. However, water scarcity is taking a toll on the country and its people. There are many solutions to consider in solving this issue, and a few that will work great for Thailand. Water scarcity due to drought is a large contributor to hunger and poverty problems in the country of Thailand, but there are solutions available that can greatly reduce these difficulties.

Starting off, it is important to understand how the country and families of Thailand function. Thailand is certainly a unique country. The population is relatively large, with a total of 69, 625, 582 people. Just over half of the population lives in urban areas, while the rest live in more rural villages. Around 32% of the total population works in agriculture-related jobs. The country has a total area of 198,117 square miles ("Kingdom of Thailand"). Equally important, it is crucial to understand the average family in Thailand. Similar to many other Asian countries, families in Thailand usually live with at least three generations in one small house or apartment. In most cases, just the middle generation works. Families in urban areas have access to healthcare, but it is very expensive and unreliable; rural families have none. Most people in urban places rely on markets for their food supply, and plumbing for their water supply, while rural places usually get both food and water from the land and people around them. Rice is a large part of the diet for both types of families, along with vegetables, fruits, meat, and spices, most of which are grown within the country ("Food in Thailand"). Clearly, there is a range of similarities and differences between the people throughout Thailand, but they are all still part of one nation that is suffering with the same issues.

Next, we need to review the problem that Thailand is currently facing. In early 2020, Thailand found itself in a drought more extreme than it has seen in nearly four decades, mainly due to climate change. Climate change has made rain patterns unreliable, more severe floods and droughts, and also affects the surface temperature of the county (Corinne Kisner). In turn, water scarcity flared up across the country. Water scarcity is having an extreme lack of water in an area. The Mekong River, a major freshwater source for the people of Thailand, is at the lowest level it's been at in close to 50 years ("Spotlight on The Asian Food Crisis"). As a result, the people and economy are finding themselves to have many more related difficulties than one would expect. First of all, are the agricultural obstacles. Farmers are unable to keep their fields in good conditions without water, which has caused a lack of crops throughout the country, loss of funds for families, and unsteady jobs for farmers. Without the income and food that farms bring in, families are finding themselves facing hunger and poverty. Aside from agriculture, drought is also causing complications with clean water. According to the NASA Earth Observatory, "River levels are so low

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that saltwater from the ocean is creeping upstream and affecting drinking water supplies" (Kasha Patel). This means that the water that people rely on to be clean for drinking, cooking, and cleaning, is now contaminated with minerals from the ocean water, and therefore unhealthy to consume. Water is

crucial to survival, and clean water inaccessibility is clearly a problem. Overall, the drought has caused many major issues in agriculture, hunger, and drinking water.

Nevertheless, there are still many solutions that can be considered in helping water scarcity due to drought. First of all, a possible solution is planting more trees throughout the country. Although this may seem like an outdated idea, “Native trees send out deep, water-seeking roots into the soil to tap into local groundwater and draw it to the surface” (Vincent Gabrielle). This means that because trees are planted in the area, freshwater will be closer to the surface of the ground, and therefore easier to access. Planting trees will majorly help the environment recover from drought in the long run, but it is not the most productive way to solve water scarcity being that trees take so long to grow. It is also difficult to start healthy tree growth in the absence of water. Continuing on, another possible solution would be to use desalination facilities. Desalination is taking ocean water and removing all the salt, making it safe for people to use. Being an expensive process, desalination takes not only a lot of money but a lot of energy too. The pros of desalination include that the facilities can last for generations and help not only the current drought, but any drought that happens in the future, and it helps both the urban and rural communities. In addition to these, drip irrigation is another possible solution to these issues. Drip irrigation is a farming system that allows for no water wastage. This is a cost-effective solution to the problem that uses the water that is already accessible in a productive way (“8 Innovative Drought Solutions That We Can Count On”). However, drip irrigation only helps with the farming and land, not drinking water. A country may also not have enough water for it to work in the first place. Lastly, water can be harvested from the air. If the air in an area has a humidity level of 50% or more, metal-organic frameworks, or MOF’s, can be used to collect water from the air. Although a fairly new discovery, MOF’s have proved to be a successful way to collect water in rather dry places. As this technology advances, it will likely become a highly effective solution to water scarcity, but as of now, the amount of water one MOF collects per day is incredibly low and insignificant. Overall, these multiple solutions all have their own pros and cons, some that would prove beneficial, and some that would not.

Clearly, all the solutions discussed would require either funding, equipment, or both, especially for a not so advanced country like Thailand. This funding would have to come from either other countries, non-profit organizations, or global groups such as the United Nations. Thailand and the United States of America have a long going positive relationship. The US tries to support the country through helping their prosperity especially, meaning economy, civility, and overall health (U.S. Relations With Thailand). Water scarcity has a large impact on both the economy and the overall health of Thailand citizens, meaning that the United States could supply funding to improve these conditions. According to the same article as previously mentioned, the United States also has Peace Corps volunteers who go to Thailand to help with education and development. These people could implement water saving lessons and awareness for the scarcity issues while teaching both children and adults. Lessons like these could teach people how to use the new water equipment and methods, as well as simple day to day ways to limit water wastage in the country of Thailand. Another group that could play a large part in the funding of these projects is The United Nations. For example, UNICEF (a branch of the UN that focuses on helping children and bettering the world for future generations), is already working to solve water scarcity issues in other countries around the world. They see that this is an issue that needs to be solved, and if the same funding that they

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provide other places with was granted to helping Thailand, the solutions that I’ve discussed could easily be implemented.

After reviewing these solutions, I have created a specific set of recommendations that I believe will help Thailand with its current struggles. This overall solution uses two of the previously discussed ideas, water

desalination, and drip irrigation. Together, these will help the water scarcity in both rural and urban areas. By following this plan, Thailand will desalinate water from the Gulf of Thailand and then use drip irrigation to ensure that they use it all in a productive way. Desalination is an exceptional way to use the water that is available to the country, and change it to fit their needs. Drip irrigation is a solution that ensures that no water goes to waste. Rice is a major crop for the country of Thailand, and it also takes a lot of water to grow. According to Lori Lewis at the Water Project, “To grow 1kg of rice, they are typically using about 3,000 liters of water, but only half of that is actually consumed by the plant” (“Spotlight on The Asian Food Crisis”). Drip irrigation is a method that helps to deliver the water directly to the roots of the plant, so the major amount of water that is used, but not consumed by rice fields could then be put to use in other ways (Netafim). This method would save nearly half of all the water that the country of Thailand is currently wasting with unproductive agriculture methods. The funds necessary to complete these steps would be raised by non-profit organizations that are already working to help water scarcity, such as The Water Project and UN-Water, along with aid from countries that they already have positive ties with. The Water Project is currently working to raise money for countries all over the world that are experiencing water shortages. UN-Water is the sector of the United Nations that focuses specifically on water and sanitation problems. Both of these groups could use what they already know about water scarcity, along with the funding that they keep in order to help ensure Thailand returns to having safe and healthy water levels again. With the funds from organizations and my set recommendations, Thailand could be seeing a decrease in its water problems soon.

Although these solutions will all take quite a bit of time, there are also ways to quickly solve the problem until more long term solutions can be put in place. According to Travel Fish, Thailand receives an average of 1,000-3,000 millimeters of rain water each year, mainly during the autumn months (“Weather in Thailand”). There are many ways to collect this rain water in order to use it in productive ways. Water can be collected in barrels, tarps, or containers underneath gutters/roofs. (Rainwater Harvesting 101). This water could then be used in multiple ways. In more urban areas, it would go directly to household uses, such as cooking, cleaning, bathing, and most importantly, drinking. In rural areas it could be used for these purposes along with the addition of watering crops and livestock. This system could also be implemented hand in hand with the drip irrigation method. If rain water were used in this way to water the crops, not only would Thailand be using water already available to them, but they would also be using it in the most productive and long lasting way possible. Rain collection is a solution that requires minimal funds and practically no human labor, but it can majorly help to maintain fresh water supplies during the drier seasons, especially if the water is kept until needed.

To conclude, there are many possible solutions to the dilemmas that water scarcity and drought have caused in the country of Thailand. Based on the country and people of Thailand, drought has caused multiple problems in all areas of life and economy. But after further research, it is clear that there are many ways to solve these issues, both short term and long term. From desalination to rain water collection and every solution in between, there are organizations, such as the United States Peace Corps and the United Nations, and ideas that can and will majorly help Thailand limit, and

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eventually, rid their struggles. Putting a plan in action is a huge step in solving any problem, and Thailand is ready to start.

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