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Syria, Water Scarcity

Syria: Taking an Initiative to Solve Water Scarcity

Introduction of Syria

For many people in the United States, there are many things we take for granted such as turning on a water spigot. This simple task for us of just turning on a water spigot and having water is not so simple in other countries. When looking around here in the midwest there are many rivers, creeks, and ponds. This makes many think; how could anyone have a lack of water available to them, it's everywhere. For many other countries this is not the case, especially in Western Asia more specifically, Syria. In order to alleviate water scarcity, people need to become more educated about the lack of water available to others around the globe. In some places there is an excess amount of water while in other places there is a lack of water. Therefore once people become more educated, people will be more apt to alleviate the issues of water scarcity.

Syria is located in Southwestern Asia. The east coast of Syria is surrounded by the Mediterranean Sea with approximately 183 km of coastline ("Geography and", n.d.). Syria's surrounding countries include Turkey, Iraq, Jordan, Lebanon, and Palestine. These countries surrounding Syria have many of the same struggles as Syria itself. Some of these struggles include hunger, wealth, water scarcity, and educational needs. In Syria there are approximately 17 million citizens ("9 years", n.d.). Out of these citizens, there are approximately 15 million people who lack proper water access ("9 years", n.d.). This is approximately 88 percent of citizens who lack appropriate water access ("9 years", n.d.)!

Water is a key component to development in children and survival through life. Due to the lack of water in Syria many households are having to spend up to a fourth of their monthly income on simply just buying a water tank for their family ("9 years", n.d.). To buy the proper amount of water for the average household in Syria it is approximately 8,000 SYP (15 dollars) per month ("9 years", n.d.). Most Americans would probably feel that this is not that horrendous of a bill to pay for water; however, our monthly incomes from Syria to the United States drastically differ. The average monthly income in Syria is 350,300 SYP (683.14 dollars) which means that their average yearly income is 4,203,600 SYP (8,197.68 dollars) ("Average Salary", n.d.). Comparatively, the average monthly income in the United States is $5,555, which makes the average annual income $66,660 ("How Much", n.d.). Therefore, comparing these two countries salaries towards each other is unfathomable. After analyzing these numbers, it's easy to recognize why Syrian families are struggling to pay for a water tank.

In Damascus (the capital of Syria) many households worry about if they turn on their sink will they be able to fill glass of water. The main water source to get their water is from the Barada river. The weather pattern for the year highly affects the water availability in the river, which in turn affects the amount of water available to households.

The Average Syrian Household

In order to understand Syrian problems, we must understand Syria as a whole. The average household in Syria consists of three generation households ("Syria the", n.d.). However, most of the population lives in small houses or apartments. While ten percent of Syria's population live in unfinished buildings or tent-like shacks; it's reported that almost 100% of the Syrian population have access to electricity ("Syria the", n.d.). However, this access in some cases can be limited to only eight hours of electricity use per day, which is almost all through generator power ("Syria the", n.d.). For many families, the amount of water they receive is very limited. Although many urban families have access to the main network of

water in Syria; there are still limitations to water access and use. However, the families in the rural areas who don't use the piped sources of water and use the open and the closed wells have a lesser chance of being able to receive water. There are times where people in the rural areas sometimes have to go two to three days without water ("Syria Assessment", 2016).

Out of all the children in households, only 8% do not attend some sort of schooling("Syria Assessment", 2016). It is said that the reason for many of these Syrian children who are not attending school simply did not attend; due to the families not financially able to afford schooling ("Syria Assessment", 2016). In these Syrian schools no government assistant programs are available; all of the expenses are paid for from the household's income. Most Syrian families live on a tight budget not having much money to spend on other rising or unexpected expenses.

Causes of Syria's Water Crisis

The Syrian Civil War is what started Syria's water crisis in 2011 ("Britannica:, 2020). This Civil War had a huge impact on the country as a whole. Leaving approximately 250,000 people dead ("Britannica", 2020). In 2006 a huge drought in the country is still affecting Syria to this day. Many believe that this long term drought was caused because of climate change ("Stokes", 2016). Thousands of people, especially farmers, started moving toward urban areas ("Stokes", 2016). Civilians even began to move to the neighboring countries. Lebanon, Jordan, and Turkey: are hosting these Syrian's for the time being.

During the Civil War, many buildings were destroyed inhibiting access to water supply. This was caused by great damage inflicted onto infrastructure. Not only did Syria not have a stable government at the time of the war going on; they were also experiencing a huge drought. Making it virtually impossible to restore all of the water pipes and causing a lot of damage and contamination to occur to the water sources. This was then the beginning of the crazy water scarcity crisis for Syria. Little did they know this would last way longer than they had expected.

Without Syria improving their water scarcity; Syria's residents will not return back to their country. Meaning the farmers will not return to their farms either. Without these farmers growing crops and producing food, this will lead to the lack of food and many hunger issues in Syria. If no solution to water scarcity is found, along with purifying the water, many detrimental outcomes will occur. Drinking unpurified water could be cause for an epidemic. However, contaminated water could be used for irrigation so plants could grow to maturity and not have drought defects.

Solutions

As we know there is a lack of available resources to meet demands in Syria; but what does this really mean? Many would say there simply isn't enough water in Syria; however, this is just a simple answer and there is more to evaluate in order to find a viable solution. The first step to a solution is education to conserve water along with waste water recycling. An educational program offered by the government should be implemented. This program would cover the basics of the current water availability along with hopes for the future. One of the hopes that would be highlighted is the use of recycling waste water.

To recycle waste water Syrians would be able to recycle runoff water from agricultural fields, waste water plants, and stormwater. Recycling water in these ways, farmers could return to their agricultural fields and use this water to produce lively crops. Reclaimed water is largely unexploited and can continuously be reused. Waste water is generally used for agricultural purposes which in turn benefits Syria due to them growing more crops for food. With proper cleaning technologies waste water can be used for human consumption once purified. However, there could be pushback from civilians who don't want to consume water they once viewed as dirty. Waste water recovery has made great strides in Latin America, so

implementing it in Syria would likely have a strong positive outcome as well. By recycling waste water it would reduce the demand and stress on freshwater sources such as rivers and groundwater. Which allows the freshwater systems to be used for human consumption.

In Syria, there is an uneven distribution to wealth. In order to help alleviate some of the water scarcity issues the government should implement a water cap program. This program would have a limit on the daily output of water a household is allowed to consume. It currently appears the people in the wealthy bracket are able to purchase as much water as they can afford. With a country that has water scarcity issues, a governmental implemented program would have a maximum amount of water output allowed per day. This would then allow the country to not run out of water as fast and make it so everyone is able to receive the proper amount of water needed.

Another solution would be to educate farmers on drip irrigation. Many farmers still farm the way their ancestors do, by flood irrigation. However, this can have a huge outpour of water in an already water scarce community. This is why implementing drip irrigation would be beneficial. It conserves water due to a slow steady stream of water to reduce plant runoff along with evaporation (Postel, 2017). It can increase crop yield up to 90% and increase water conservation by 60% (Postel, 2017). Overall this system would save water simply because this system just drips water directly to the root and soil (Postel, 2017). Many farmers have seen good returns on their crops, as they are able to grow to their full potential while still keeping their water supply on the lower end (Postel, 2017). As the drought continues or rivers dry up it is becoming even more crucial to find ways to improve crop yields and drip irrigation is one of those tools needed to do this. Farmers will need to learn more about drip irrigation and invest in the upfront costs of installing a drip irrigation system. Luckily, if they invest they should see a strong return in investment along with helping the environment. This system would potentially conserve not only the water; but also the fertilizer getting put onto the field!

When we are talking about implementing a drip irrigation system many probably believe that this seems very difficult and would not necessarily be the most realistic solution. However, when you are looking at installing a drip irrigation system it may not be as difficult as one may think. The few things that the farmers would need in order to start a drip irrigation system would be a filter, a pressure regulator, a timer, and half inch tubing. Then lastly you would need some sort of water hook up like a faucet. For a farmer to set this type of irrigation system up on his crops would take some work. However, after the system is all set up the farmer will begin to save water immediately. Not only will the drip irrigation be beneficial to the farmer and the country's water scarcity problem but will also be beneficial to the crops themselves.

One new way of utilizing ways to collect water is through catching fog. Fog catching has been done for centuries, but is now being recognized as a technology to utilize in water scarce communities (Trevino, 2020). Even though Syria can have a hot, dry climate, at times in the year they do have wet, cold winters (“Geography an”, n.d.). This means there is fog at times. One way to utilize the fog to have more water available is by catching the water in the fog particles in a little miniscule size netting (Trevino, 2020). The net can capture 200-400 litres of fresh water each day (Trevino, 2020). Imagine using many of these nets when the climate is in a foggy state. There will be more water available for various uses. The water could be clean enough for human consumption but if it is contaminated then it can be used as waste water and can be implemented for drip irrigation (“Is Wastewater”, n.d.). Fog catching is sustainable, affordable and efficient!

Overall, education, water recycling, even distribution of water, fog catching and drip irrigation seem very efficient in Syrian’s hopes to fix the water crisis. Although some of these solutions seem like they take a long time to actually make a difference in saving water over time; these solutions could make a large impact on water being used more efficiently. Once the water is being used more efficiently it will become easier to save more water and grow the amount of water that is available. However, without proper

education on water scarcity no solution can come to fruition. Everything boils back to education. Without properly being educated on the agriculture and climate issues it will be hard to overcome water scarcity and hunger happening in Syria and worldwide.

All of these solutions above are great ideas when talking about the water scarcity problems anywhere in the world. However, now we have to specifically look at the citizens of Syria. Well when we are looking at this one of the biggest barriers for the citizens of the people of Syria to overcome this water scarcity problem is the monetary problems. Many citizens would not have nearly enough money to start any of these solutions themselves which is why they continue with their traditions. In order to overcome this main situation/problem these citizens will have to start looking at organizations and solutions bigger than themselves.

Organizations

Some of these big solutions would be hard to implement and go through without having any help getting there. After doing some research I have found that there are many organizations out there that are looking to help with conserving water both at a local level and global level. One organization I found that seemed to be very successful in their work was the World Water Council. This council helps to inform people of the water conservation problems globally ("Together We", n.d.). Not only do they inform people on the water scarcity problems they also act on some of these problems.

People from the World Water Council stated that they have a forum of people from all over the world to come together to talk about these major issues ("Together We", n.d.). Therefore, I believe that presenting some of these solutions that I have recommended earlier would be a great start to making something like these small ideas get put into action. I believe that in order for something to change in Syria and all over the world in terms of water scarcity one single person cannot do it alone. Therefore, having a bigger organization behind you supporting your ideas will help with getting your theoretical solutions into a real solution. The World Water Council could also help do some of the fundraising for some of these projects/solutions that one would not be able to do by themselves.

Government

The government plays a very important role in every country around the world. I believe that the government should become more involved in the problems happening in their country. There are many agencies and programs that the government could offer to push people to become more involved in their country and the problems going on in their country. One thing that could really make a difference is the government getting involved with big businesses and pushing them to conserve water. Ways they could do this is maybe reward them with a monetary reward if they are saving a certain amount of water each year. Not only would this make the businesses act upon the water problems but this would also make the people of these businesses realize how serious the problem is and how the government is doing their best to try to put an end to the water issues. Now these are only a few examples of how the government could step in but I believe that if the government steps in and shows that they care soon many other people would be on board and many would start to conserve water.

Conclusion

Fifteen million people in the country of Syria have a lack of water access ("9 years", n.d.). With proper education, water recycling, even distribution of water and drip irrigation alleviating water scarcity in Syria is possible. With making improvements to water scarcity Syrians who have taken shelter in other countries will return home along with farmers returning to their farms to produce more crops. Once everyone is able to return home the quality of living for everyone in the country will be greater. Partially

because of all the fresh food the farmers will be able to produce again and simply just because of all the people coming back to their country to live and continue to work. From all of the challenges Syria has faced this would be a great reward for all living in the country. Water is a basic human right. No one should have to wonder when they will be able to drink another glass of water.

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