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Water Crisis

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One of the things most of us take for granted is access to water. We can turn on the faucet and get a drink anytime we want or take a shower and wash our clothes with just the simple twist of a knob. Yet for people living in remote areas, accessing water is far more complex. Water is one of the most basic human needs, yet it remains a struggle to access impoverished areas. When water becomes contaminated, it causes health and sanitation issues for the people living in that country. To fix this issue, steps must be taken to ensure broader access to more people and to educate those living in the area on the importance of using clean water for cooking and drinking.

A lack of quality water is an issue that many people living in the Middle Eastern country of Lebanon face. “Home to almost 5 million people,” Lebanon is found along the Mediterranean Sea and is the site of some of the oldest human settlements (Britannica 1). “In the summer of 2021, Lebanon’s water crisis spiked, with 71% of the population facing a water shortage” (Britannica 1). “With a population of about 5 million, that is a significant amount of people who only have access to minimal water” (Britannica 2). An ongoing drought makes it hard to manage the current water system along with the water piping being in poor condition.

Some of the residents of Lebanon are impacted by this more than others, especially the refugee community, whose location already lacks sanitation. The war Lebanon faced in the past caused problems for the people including displacement from their homes and a decimation of current structures. “Economically, the country was not further able to help the people because of distress in the banking and insurance industries” (Britannica 3). These challenges coupled with the inability to access even basic things like clean water, compound the stress of an already grim situation.

Lebanon’s trade routes have also affected them economically. During the civil war, the people of Lebanon struggled to produce goods for use within their own country. Throughout the war, smuggling and illegal production were happening, changing the patterns for exports. The goods being produced were often being stolen and smuggled across enemy lines.

The war also produced a large amount of unemployment leaving a long-lasting effect on the workforce. Places of employment were destroyed, stranding people without an income and causing them to struggle with housing, food, and inflation on the limited goods still available. The economy of Lebanon took a huge hit, and they continue to face struggles today.

These struggles impact many families who are described as “close-knit and loyal” (AFS- USA 1). The children receive strict discipline in their homes and are raised to be calm and respectful. Mothers typically take care of the household chores and tend to the children, but there has been a shift in the younger generation with more mothers starting to work outside of the home.

It is also common for more than one generation to live in a single house. Brothers and sisters are very close with each other along with their cousins, who often live nearby. Teens and children play soccer and basketball and enjoy working out. Adults spend time visiting one another and holding gatherings where they can be together with family and friends. Families tend to spend a lot of time cooking together. The Lebanese diet is based on Mediterranean and Arab cuisine. The diet includes lamb, beef, and chicken along with meat stews and vegetable dishes. Preparing food in Lebanon, as with anywhere in the world, requires a lot of water, and with a shortage of water along with unsanitary conditions, people can get sick. Improper water sanitation can cause the spread of diseases.

Along with a strong family structure, Lebanon has many different ethnic, religious, and kinship groups. Religion is viewed as an important part of their country's customs. "They are a combination of Phoenician, Greek, Armenian, and Arab" (Britannica 1). "They speak mainly Arab, but smaller portions may speak Armenian or Kurdish, French, and even English. About a quarter of the population is Shi'a Muslims and Sunni Muslims, and the country itself serves as a place of refuge for persecuted Christians and Muslims" (Britannica 1). With such a wide variety of views and ethnic groups, it is hard for people to reconcile the root causes of issues taking place in their country including the issue of water.

Most of the population lives on the coast with fewer people living inland. Fresh water supply tends to be limited and terracing in the mountain regions is popular. The northern villages are more modern and advanced in their buildings and upkeep with the southern regions being involved in agriculture. The southern villages are prone to less fertile farmland, producing a lower yield for farmers. Coastal cities are often used by refugees who are looking to escape their own countries for religious or governmental reasons. This leads to overcrowding and people living in buildings that are quite outdated. Too many people create facilities that cannot properly handle things like human waste. The struggles they face in many areas are affected by outdated systems of management, which are not designed to handle the volume pressed on them by current population levels. This strain on water supply systems reduces sanitation and access.

According to Global Waters, "only 48% of the population has access to safely managed water along with only 20% having access to safely managed sanitation" (Global Waters 1). Unsafe practices in the management and treatment of waste reduce the amount of drinking water for residents. In the past, the government has received aid for projects linked to safe drinking water and improving water waste. "Through the Lebanon Water Project (LWP 1) and a new \$40 million project, USAID is improving access to safe drinking water, improving wastewater management, and promoting efficient irrigation in partnership with Lebanon's five public water utilities" (Global Waters 2). Steps like this can be a huge help to a country facing sanitation issues.

At the government level, the best option is to work on water management systems. One way to do this is through the completion of several dam pump projects, which will increase access and provide clean water. The country is currently working on the construction of nine different dam projects with 14 more being considered "This brings the total number of dam construction projects to 23, down from the original 26 that were proposed to be completed by 2035 Water Infrastructure in Lebanon - Fanack Water" (Fanack Water 1).

“It should be noted that as of September 2020, the World Bank suspended its loan for the completion of one of the largest dam projects, the Bisri Dam” (World Bank 1). “The project was suspended because the Lebanese government failed to comply with the conditions put forth by the World Bank including engaging important supporters and having a contractor on site by September of 2020” (World Bank 2). “Money that was allocated for this project, will be redistributed to assist with other needs in the country” (World bank 2). “Prioritizing this project in the future would greatly benefit the population since the initial project included methods to make the water drinkable and to improve the quality of the surrounding groundwater overtime” (World Bank 2).

On an individual level, residents can implement small changes to improve their water quality and keep them healthy. The first step to breaking down barriers is to explain to people the importance of clean water and the benefits of managing it the proper way. One step that can be taken is to access small water testing kits. This will help the homeowners know what their water issues might be and if their water is safe for drinking and cooking. If it is not, bottled water, if available, should be used for drinking.

Boiling water can help to kill bacteria and make it safer for cooking. This method should be employed when possible. Families can also use chemical treatments to help kill microbes and make water safe for drinking. A good example is “chlorine dioxide tablets, which can kill *Cryptosporidium*” (CDC 1). The tablets are an easy and efficient way to kill bacteria.

Educating people about how purified water can cut down on diseases can be done through community-based programs and through the school system. Establishing a committee or program to help families understand that both human and solid waste should be controlled and kept away from water sources that will later be used as drinking water is important.

Once people understand that clean water keeps them from getting sick, collect data and info on the progress happening within communities, to see if people are following steps to keep the water safe. If progress seems minimal, conduct a survey, and see if they are following the steps properly and what might be happening that is hindering progress. If one family might not be on the same page in an area, it could cause issues throughout the community.

After people understand how clean drinking water impacts their overall health, Lebanon should look at implementing water safety plans (Dai 1). Water safety plans start with a team of professionals who will look at all areas of water safety from individual to public uses along with agriculture, business, and industry (WSPS 1). After the information is gathered, priorities must be decided on and an improvement plan set up for those items that are action or first-step items (WSPS 1). When the plans are implemented, monitoring must take place with data collection to determine if the plans are working (WSPS 1). If they are working, the tasks for maintaining them should be put into the control of agencies that have trained personnel to make sure that safety standards are being met and followed (WSPS 1). Reviews of the success of each step should be conducted on a yearly or bi-yearly basis to make sure that improvements are not needed and that goals are still being met (WSPS). Some action items could include things like using wastewater for agriculture and improving water recycling in industries (Dai 2). This can also be tied back to the completion of dam projects mentioned earlier. If corrective action is demonstrated, reapplying

for World Bank funds for the completion of the Bisri Dam should be considered. This could be looked at in the five to ten-year plan.

The country of Lebanon is home to many families who are being impacted by poor water. War along with a challenging economy, makes it difficult for families to make everyday provisions for themselves, and addressing a country-wide solution to the water problem is a challenge. Emphasizing health, water safety, and sanitation is something that should be addressed through both traditional and non-traditional education. Once people recognize the need to keep their drinking water clean and separate from water used in agriculture and industry, a water safety plan should be created to take on prioritizing water problems. Education and risk management assessment are some of the first steps in creating a healthy environment for Lebanon residents.

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