

Pia Piccoli
 Rowland Hall
 Salt Lake City, UT
 Pakistan: Water Crisis

Pakistan: running dry

Pakistan is a third world country located in Southern Asia. Bordered by Iran, Afghanistan, China, and India. Pakistan faces many problems, one being a major water drought that has been going on since 2005 (Salman). Pakistan is an overpopulated country and its lack of rainfall makes it difficult to maintain enough water for the country. This is a big issue because climate change has really affected rainfall all over the world, Pakistan included. In mid-June 2022, Pakistan started getting extreme monsoon rains and floods that have killed over 1,100 people. It has covered thousands of square feet of the country and has affected almost the whole country. This has now become a huge problem for all of the Pakistani people but still hasn't changed many of the issues that Pakistan is still in (Devastating Floods in Pakistan). Poverty is a huge issue in Pakistan because the country is poor. 39.3% of the population of Pakistan is in poverty (Ani). Lahore is the second largest city in Pakistan (Lahore, Encyclopedia Britannica). In this city, each person uses approximately 80 gallons of water per day, that's 29,200 gallons a year (Raza). I am using this as an average because it's one of the biggest cities so it will be the most exact with water usage. Now although that number is daunting, that is not a lot of water. As a result of government mismanagement, Pakistanis' do not have access to clean water. In comparison to the USA, Pakistan's water shortage is a real issue. An average United States family uses approximately 300 gallons of water per day, that's 109,500 gallons per year (Environmental Protection Agency). The comparison between these two numbers is huge.

The typical family size in Pakistan is approximately 6.7 persons, which is quite a lot (Ahmed). The typical house for a Pakistan family is a pukka house which is built from brick, concrete or stone (Housing of Pakistan). Pakistani families eat a balanced meal of rice, wheat-based flatbread, lentils, vegetables, yogurt, and fruits throughout the day (Munyon). The typical job for a Pakistani family is working in construction or electrical (Working in Pakistan). This is one of the more popular jobs in Pakistan. The average wage for a Pakistani family is about 81,000 PKR (Pakistan Rupees) or 498 USD (US dollars) a month (Lauren). Many Pakistani families have access to a public education system for their children. Although most kids have access, not all kids go to school. Most kids in grade school will attend school but by the eleventh grade only 9% of children stay in school (Hunter). Kids have to leave school because of the poverty that their families are in. The water crisis adds to the poverty that Pakistan is already in.

Pakistan's main problem is water, or lack thereof. Pakistanis have been unable to have a decent amount of water flowing in their homes since 2005. This may be caused by many problems. Pakistan has a dry climate, the country doesn't have much rain throughout the year and therefore 90% of freshwater they receive is put into agriculture and cultivating crops (Mukhtar). Another issue that uses most of Pakistan's water is flood irrigation (Mukhtar). This means that the farmers of the crops are just flooding the fields and this is a huge waste of water because some of the water will evaporate and won't even be able to water plants. This, not only wastes water but then it won't be able to be recycled back into the environment. There is already a water shortage, thus there should be no water wasted. These two problems contribute greatly towards Pakistan's water crisis. If Pakistan does not do something soon they will not have enough water to sustain the population by 2025 (Ashraf). Especially with Pakistan's growing population.

My solution is to recycle water through the house and reuse it. This water tank would take water from one's house while one was washing the dishes, and clean it, therefore one can reuse the water. The water then gets reused to become more water that can be used for many other things. A similar resource is being

used right now. Greywater Action is a nonprofit organization that takes water from houses and uses it to irrigate the lawn and plants. Greywater uses water from sinks, showers, washing machines, and tubs, and hooks up a system that waters the plants and flowers in your home (Greywater Reuse). Although their system is different and provides different uses, it is similar to my idea for recyclable water sources. The water tank that would be made would need to be hooked up to the water system that is run through the houses, thus it can correctly filter and reuse the original water. The tank needs to have many filters in order to clean the water enough for it to be used once again. Filters do many things. They deionize the water which means that it removes ions from the water. This is a crucial step because although this water is not used for drinking it still needs to be somewhat clean (Nicholson). It is most important when being used to clean dishes or watering plants. About 20% of Pakistan has clean running water and Pakistan is a large country with overpopulation. Less than half of the population has running water (Ahmed). This is obviously a large issue. That's why water tanks are important.

The United States has a water filtration system where water from your toilet is flushed, filtered and reused in the toilet. This is important because it saves lots of water by recycling. Pakistan does not have the resources for this type of filtration system. In September of 2021, an article was released about a filtration system that was installed in Karachi, Pakistan. This article talked about how an international humanitarian relief agency installed water tanks in a small town and it supplied clean water to 3,570 people. (New Water Filtration System). It was because of this water filtration system that more people in Pakistan got clean and filtered water.

Water filtration tanks and systems are essential to be able to survive. That is why it is important to have clean water. Even if it's just for cleaning dishes and watering plants. Water is a crucial part of our existence. The water filtration tank will be hooked up to the water system already in place and it will be hooked up through pipes. The dirty water will run through the tank and go through multiple filtration systems that will help clean the water enough to make it clean enough to use again. Then the water will flow out through the tank and back up through the sink or hose to be used once again. At some point the tank will have to be cleaned by just simply emptying the tank with all the particles and dirt in order to prevent the chemicals and dirt from flowing into the clean water again. It will not be emptied frequently but it is something that people should be cautious about.

Pakistan is a poor country. It is because of their economy that it's difficult for water resources to become available. Since resources are scarce in Pakistan, Pakistanis' cannot get enough water for their families and lives. This causes many problems in the economy and the government. If they run out of water then they do not have anything to survive. Since Pakistan is overpopulated, its water sources are getting more scarce by the year. A big part of this issue is climate change and its effect on the environment. Pakistan is not a rainy environment and only gets approximately 228.18 millimeter a year which is approximately 9 inches (Pakistan Average Precipitation). That is not even close enough to sustain Pakistan's agriculture, And especially enough to sustain the people of Pakistan. The clean water that Pakistan has is dwindling more and more, Especially with the overpopulation that is continuously increasing the population and economy. At the progressive rate that Pakistan is growing at, their water is estimated to be gone by 2025 (Ashraf).

Pakistan's poverty plays a major role in the water shortages. It is because Pakistan is a poor country that they have such bad issues with handling water distribution (Thelwell). Poor management in Pakistan has cost the Pakistan government about twelve billion dollars per year. This is from inefficient water supply and sanitation, but also from floods and droughts (Ani). Water distribution isn't the only thing the Pakistan government is dealing with, The government also needs to deal with poverty. This is an underlying issue that has been going on for quite some time. In 2018, thirty-one percent of Pakistan's population was living in poverty (Thelwell). This contributes to the water conservation issue because the people in poverty have even more difficulty accessing clean and filtered water. That's why the water tank

is important. Although the water is not safe enough to drink, it helps sanitize and prevent germs from getting on food and other items that are digested or near one's face.

The Pakistani government is not managing the water usage in Pakistan correctly. The government is unsure of how to utilize the little materials they have to give the people of Pakistan enough water. The water tank that I envision will help recycle water, therefore it can be used for more purposes. The tank will be able to clean the water from sinks and toilets and filter it, in which the water will be able to be used once again. The tank will be installed with the purpose that it will take the water from the drains and reuse it for more water. Although this is something that is very common within first world countries, third world countries do not have the same advantages and utilities that first world countries do. This is why the water tank is so essential. Without filtered water, diseases are exposed and can put people at harm for sickness and even death. That's why filtered water is so imperative to surviving. The filtered water will protect one from diseases. One of the most important things when it comes to filtered water is protecting oneself from germs. In conclusion, Pakistan has a large drought problem, within that they have been facing huge floods. Pakistan's clean water is still a huge concern and we need to act soon before it is too late.

Works Cited

- Ahmad, M. (2017, August 14). *Drinking water quality status and contamination in Pakistan*. Drinking Water Quality Status and Contamination in Pakistan. Retrieved September 7, 2022, from <https://www.hindawi.com/journals/bmri/2017/7908183/>
- Ahmed, T., & Ali, S. M. (n.d.). *Pakistan Chapter 3 - DHS Program*. Characteristics of Household and Respondents. Retrieved September 7, 2022, from <https://dhsprogram.com/pubs/pdf/FR29/03Chapter3.pdf>
- Ani. (2021, June 22). *Poverty in Pakistan rises to over 5% in 2020, Estimates World Bank*. Business Standard. Retrieved September 6, 2022, from https://www.business-standard.com/article/international/poverty-in-pakistan-rises-to-over-5-in-2020-estimates-world-bank-121062200084_1.html#:~:text=Using%20the%20lower%2Dmiddle%2Dincome,23%2C%20reported%20The%20News%20International.
- Ani. (2021, June 22). *Poverty in Pakistan rises to over 5% in 2020, Estimates World Bank*. Business Standard. Retrieved September 7, 2022, from https://www.business-standard.com/article/international/poverty-in-pakistan-rises-to-over-5-in-2020-estimates-world-bank-121062200084_1.html#:~:text=Using%20the%20lower%2Dmiddle%2Dincome,23%2C%20reported%20The%20News%20International
- Ashraf, M. (2018, June 8). *Pakistan's water taps to run dry by 2025: Pakistan*. Pakistan - Geo.tv. Retrieved September 7, 2022, from <https://www.geo.tv/latest/198488-pakistans-water-taps-to-run-dry-by-2025#:~:text=If%20the%20present%20situation%20continues,be%20immune%20from%20the%20disaster.&text=The%20gap%20between%20water%20availability%20and%20demand%20is%20widening>.
- “Devastating Floods in Pakistan.” NASA, NASA, <https://earthobservatory.nasa.gov/images/150279/devastating-floods-in-pakistan>.
- Encyclopædia Britannica, inc. (n.d.). *Lahore*. Encyclopædia Britannica. Retrieved September 7, 2022, from <https://www.britannica.com/place/Lahore>
- Environmental Protection Agency. (n.d.). EPA. Retrieved September 7, 2022, from <https://www.epa.gov/watersense/how-we-use-water>
- For a sustainable water culture*. Greywater Action. (2021, October 23). Retrieved September 7, 2022, from <https://greywateraction.org/>
- Hunter, R. (2021, November 2). *Education in Pakistan*. WENR. Retrieved September 7, 2022, from <https://wenr.wes.org/2020/02/education-in-pakistan>
- Lauren Soucy Lauren Soucy is the VP of Marketing for Time Doctor. (2022, January 10). *What's the average salary in Pakistan in 2022?* Biz 3.0. Retrieved September 7, 2022, from <https://biz30.timedoctor.com/average-salary-in-pakistan/>

- Mukhtar, I. (2020, September 30). *With water scarce, Pakistan helps farmers grow more with less*. Reuters. Retrieved September 7, 2022, from <https://www.reuters.com/article/us-pakistan-water-climatechange-farming/with-water-scarce-pakistan-helps-farmers-grow-more-with-less-idUSKBN26L0BN>
- Munyon, V. V. (n.d.). *Customs and cuisine of Pakistan*. Together Women Rise. Retrieved September 7, 2022, from [https://togetherwomenrise.org/customsandcuisine/customs-and-cuisine-of-pakistan/#:~:text=Rice%2C%20wheat%2Dbased%20flatbread%20\(,popular%20breakfast%20is%20Halva%20Puri](https://togetherwomenrise.org/customsandcuisine/customs-and-cuisine-of-pakistan/#:~:text=Rice%2C%20wheat%2Dbased%20flatbread%20(,popular%20breakfast%20is%20Halva%20Puri).
- New Water Filtration System serves 3,570 villagers in Pakistan - Pakistan*. ReliefWeb. (2021, September 21). Retrieved September 7, 2022, from <https://reliefweb.int/report/pakistan/new-water-filtration-system-serves-3570-villagers-pakistan>
- Nicholson, D. (2020, March 2). *Water Tank Filters*. Practical Sailor. Retrieved September 7, 2022, from <https://www.practical-sailor.com/systems-propulsion/water-tank-filters>
- Pakistan average Precipitation 2022 data - 2023 forecast - 1901-2021 historical*. Pakistan Average Precipitation - 2022 Data - 2023 Forecast - 1901-2021 Historical. (n.d.). Retrieved September 7, 2022, from <https://tradingeconomics.com/pakistan/precipitation>
- Raza, A. (2020, April 2). *Water usage in Lahore increases*. thenews. Retrieved September 7, 2022, from <https://www.thenews.com.pk/print/638180-water-usage-in-lahore-increases>
- Thelwell, K., & Project, B. (2022, May 12). *Poverty in Pakistan*. The Borgen Project. Retrieved September 7, 2022, from <https://borgenproject.org/tag/poverty-in-pakistan/#:~:text=Pakistan%20is%20among%20the%20poorest%20nations%20in%20the%20world>.
- Working in Pakistan*. Working in Pakistan | Expat Arrivals. (n.d.). Retrieved September 7, 2022, from <https://www.expatarrivals.com/asia-pacific/pakistan/working-pakistan>