

Lizzy Welke, Student Participant
Gilbert High School
Gilbert, IA
Pakistan, Factor 2

Situations Contributing to Pakistan's Water Supply

Water scarcity and farming practices, which reduce water supplies, have caused diseases and hunger in Pakistan. Improved irrigation technologies and conservation practices would help Pakistan eliminate diseases and reduce hunger. People need to have a good water supply, in order to stay alive. Some good can come out of the bad, though. Countries all over the world are trying to give help to the people of Pakistan, whom are in great need of it. Throughout the years, Pakistan has not been able to improve their daily lives at all because of war and other worries far bigger than the average person has to deal with. By education and implementation, Pakistan farmers can adapt better farming skills, so they will be able to improve irrigation technologies and their conservation practices.

When one thinks of the country of Pakistan, most think of impoverished people. Well, that is not a lie. About 165,803,560 people live in this small country. In Pakistan, 35 million people live in rural areas alone and 1/3 of those people live below the poverty line. Those who live in rural areas usually do not own land. But 60 percent of the people that live there rely on agriculture as their income. Additionally, the government is not just trying to combat the growing water problem in Pakistan, but also numerous political, economic, and social problems. The country heavily depends on one river as their water provider, the Indus River. Pakistan has not always suffered from water scarcity, but it is a problem that is growing bigger and bigger every day. During the country's infancy, water availability was quite high, at 5,600 cubic meters per person. Five decades later, that number has plummeted quite a bit, to 1,000 cubic meters per person.

The physical geography of Pakistan makes for a challenge for farming. In the north, there are the Great Highlands, which is part of the Himalayan chain. The Baluchistan Plateau is in the southwest. This plateau is mostly made up of mountain ranges, desert and dry, un-useful lakes. Directly east, the land is a largely barren desert. Water is a necessity because of this. Pakistanis need water to grow food to stay alive, but also a good water supply to drink from so they do not get dehydrated or deathly sick. The one greatly needed lifeline for the people of Pakistan is the Indus River. Without it there would be no fertile land to till for food or flood plain to catch rainwater that runs off the mountains. Pakistan has three seasons: autumn/winter, which is cool and from October to February; a hot spring, from March to June and a usually wet summer, from July to September. During these seasons there is a large variety of climates. This is both good and bad. It means the people can farm a variety crops in the country, but also the weather could change abruptly and kill crops that are badly needed. The winter brings snow to the mountains in the north and monsoon rains in the east. The rainfall ranges from 150- 200 mm per year in the coastal areas to 475 mm on the plains to 1500 mm in the mountains. A great range in temperatures exists as well. From winter to summer the average temperatures range from -20- 0 degrees Celsius in the north, while it ranges from 14- 35 degrees Celsius in the south. As one can tell from these ranges, the north and south have very different temperatures. Unfortunately, this causes the natural vegetation in Pakistan's lowlands to mostly be only scattered grassland and stunted woodlands. Only about 3 percent of the total land area is covered by forest. People must rely on wood for cooking and heating, which has lead to deforestation and contributed to the severity of the flooding and erosion.

Ismail Serageldin, vice-president of the World Bank, predicted in 1995, "Many of the wars of [the twentieth] century were about oil—but the wars of the next century will be about water." Most experts believe the wars will start in the Middle East, which is not very far from Pakistan. Researchers and

scientists say the battles over shrinking water supplies are rooted in unassailable scientific facts and human population dynamics. The “Blue Planet” (10 Leone) has plenty of water, but the problem is most of it is in the world’s oceans. The ocean’s water is 97.5 percent of the earth’s total water supply; it is essentially unusable for drinking or irrigation. That leaves 2.5 percent of water as fresh. Of that amount, 68.7 percent is frozen in glaciers and permafrost, and another 30.1 percent is located extremely low under the earth’s surface, inside the crust. This leaves only 0.4 percent as surface water. Some examples of surface water would be rivers, lakes, streams, and clouds. This lack of surface water is becoming an even greater concern because around the world human population is growing. An estimated 1.2 billion people drink unsanitary water. About 2.5 billion lack proper toilets or sewage systems. *National Geographic* reports every twenty minutes, “eighty children around the world will die because they did not have enough clean water or sanitation facilities. In one day, 9,300 people will have perished from diarrhea, cholera, and other diseases spread by contaminated water or the lack of water for adequate hygiene.”

Water shortages in Pakistan are serious! This problem has had a great impact on the health of everyone in the country. Today in Pakistan, 12 percent of the people do not have any type of access to improved water sources, while 39 percent are without sanitation facilities. Shortages like these force people to consume polluted water, which increases their likelihood of catching a waterborne illness. If agricultural shortfalls continue, then importing food will not be an option because of lack of capital. So, famine-like conditions may very well become a harsh reality. As the Indus River’s water supply continues to dwindle, little-by-little, seawater has begun to make its way in. This greatly spoils irrigated land and aquifers. These water degradations and shortages decimate farms and spur mass migrations to major cities.

The people of Pakistan still do not make enough money to support their families and wanted life styles. What if they had a bad year for crops? How would they go about getting another job to pay for their needs? And who would hire someone, when there are so many people in Pakistan already? For the workers making a living off of the farmers’ crops “irrigation and drainage are critically important to Pakistan’s irrigated agriculture, which is the backbone to the economy. The improved watercourses under the original Sindh On-Farm Water Management Project have made positive impacts in terms of enhanced and more equitable water supply and increased incomes by farmers. This additional financing will help extend these benefits to broader sections of the farming community in Sindh,” said Yusupha Crookes, World Bank Country Director for Pakistan. The Province has about 42,000 watercourses but so far only 17,000 have been improved by on-farm water management programs. Improvement to 17,000 watercourses is good progress, but over half have still not been upgraded.

The irrigation system presents a great engineering achievement while also providing water to fields that count as ninety percent of agriculture production. But, serious problems on the design of the irrigation system prevent achieving the highest potential of agricultural output. Pakistan water management is inflexible and unresponsive to current needs of greater use of water efficiency and high crops yields. The charges for water use in Pakistan do not meet operational and maintenance costs, even though rates have more than doubled in the past twenty years. Because of this low cost, water is usually wasted by farmers. Government officials do not practice proper water management. The government management of the system is not extended beyond the main distribution ‘channels.’ When the water gets distributed it could be contaminated, which will lead to lower value of crops and lower income for each working person.

“Pakistan has one of the world’s most extensive water systems for irrigation and for the transportation of water. Since it has been neglected and fallen in to disuse, steps need to be taken to address the situation. Pakistan needs to do much more internally to tackle the problem. The US had helped arrange the first meeting of Pakistan’s federal, provincial and local water authorities, who ‘were not talking to each other’. Before seeking external mediation, Pakistan should get its own house in order so that questions are not raised about its use of water resources. It is not that there may not be some serious issues that have to be

medicated, but Pakistan has to get control of the water they currently have, because if you go to a... mediation body and say water is being diverted, the first response will be you are not efficiently using the water you have," says US Secretary of State Hilary Clinton. Hilary Clinton's statement is very accurate concerning the water supply in Pakistan.

One major problem making water scarcity so hard to fix is the government. Sixty-nine percent of all freshwater is used to irrigate crops. From an agricultural standpoint, the production of food needs to be higher because of the growing population, but the diminishing water supply will make that increasingly difficult. So, as crop production is stepped up for the growing population, water supply will be drastically reduced. The governments have compounded the problem by subsidizing irrigation water to encourage farmers to grow more food, but the practice hastens water depletion (11 Leone). Farmers have begun relying on underground aquifers for irrigation water more and more. In many regions of the world, farmers are extracting more from the water table than can be replenished by rainfall. Moreover, many underground water sources are "fossil aquifers," which are remnants of ancient climates that were far wetter than current conditions. Pumping from fossil aquifers will eventually exhaust them (11 Leone).

Another major problem is leaky pipes or badly maintained pipes. Citizens are frustrated and are calling for immediate action. Messes from the leaky pipes have become any everyday eyesore. Water fills the cities' streets with muddy ponds. "Pedestrians often get splattered with stagnant water when a speeding car passes by," says an Islamabad citizen. "I go through this road daily to attend my shop, but my shoes and clothes are often splashed with muddy water," said another. Thousands of gallons of water run out on the road every day, making it difficult for pedestrians to walk. This wastes drinking water, which makes a big impact. Pakistan citizens are going to be able to receive only a little water in their homes because of leaky pipes. "We have lodged out complaints with the Capital Development Authority (CDA) several times to repair this puncture in pipes," adds Sanaullah. What does the CDA do? The governments' agency is supposed to be in charge of the water supply network, including pipe maintenance. That is why the government needs to step up their game!

Coping with these leaky pipes is stressful. Khan says, "The CDA is planning to run pipes from the Tarbela reservoir, 60 kilometers west of Islamabad, for the development of the new sectors in the city." Experts are against this. They claim there is no need to bring in water from Tarbela to Islamabad. Since the capital has enough water to cater to its citizens' needs. The only problem, experts say, is poor maintenance of water supply pipes and the need to plug leakages. "Islamabad has the highest per capita water in Asia, but in reality consumers receive less water due to loss of water from source to consumer. Most of the wastage can be stopped if the leakages are plugged," Arshad Abbasi said. Jahangir has an idea. He thinks, it would help if the government sets up an emergency telephone line, so people can inform authorities when they see leaking pipes. Communication links have not been put in place yet. Until then, residents will have to find other ways to voice their demands for a better water service, which is needed.

One way this problem could be remedied by education. According to a study carried out by the Sustainable Development Policy Institute (SDPI), which is a local policy-oriented, research center, 60 percent of the water for drinking gets wasted. The estimated average water supply to the city from surrounding resources, such as dams and tube wells, is about 112 million per day. Of those gallons, 42 million come from Simly Dam, the city's main source. The city loses water right from the time it leaves the source. This is because of the water distribution network's poorly maintained filtration plants. "Those in charge at the plant do not usually have the relevant qualification and experience," says Muhammad Jahangir, the project manager at The Network for Consumers Protection. This is a national, public interest, nonprofit organization, which ensures consumer rights through education and training. The

people who are in charge at the water plant need to be educated and taught on how they should improve and maintain the water supply for the city.

The education of Pakistan's citizens would improve the water situation in that country. The government is responsible for balancing the need the water for agriculture and human consumption. However, other countries need to help! Pakistan is still having issues within the country itself. The flooding that occurred during the summer has caused even more concern within Pakistan. Aid has been delivered from all over the world. The water problems in Pakistan will take the cooperation of authorities within Pakistan and outside countries willing to help.

Bibliography

- Ahmed, By Amin. "DAWN.COM, Pakistan, WB Approves \$50 Million for Water Management." *DAWN.COM, Home, Latest News, Pakistan, World, Business, Cricket and Multimedia*. The DAWN Media Group, 1 July 2009. 22 Sept. 2010. <<http://www.dawn.com/wps/wcm/connect/dawn-content-library/dawn/news/pakistan/11-wb-approves--50-mln-for-water-management--il--05>>.
- Cothran, Helen, and Scott Barbour, eds. *Global Resources: Opposing Viewpoints*. Farmington Hills: Greenhaven, 2003. Opposing Viewpoints Ser. Hildebrandt, Timothy, and Jennifer L. Turner. "Water Crises in China and Pakistan." *Woodrow Wilson International Center for Scholars*. 12 June 2002. 18 Sept. 2010. <http://www.wilsoncenter.org/index.cfm?event_id=22182&fuseaction=events.event_summary>.
- Khan, Sheharyar. "Islamabad Citizens Demand Better Pipe Maintenance." *Asian Development Bank, Country Water Action: Pakistan*. Asian Development Bank, Nov. 2006. 20 Sept. 2010. <<http://www.adb.org/water/actions/pak/islamabad-citizens.asp>>.
- "Pakistan." *Global Education*. 20 Aug. 2010. 27 Sept. 2010. <<http://www.globaleducation.edna.edu.au/globaled/go/pid/1194#People>>.
- "Pakistan Irrigation - Flags, Maps, Economy, History, Climate, Natural Resources, Current Issues, International Agreements, Population, Social Statistics, Political System." *Photius Coutsoukis; Photius; Fotis Koutsoukis*. ITA, 5 Mar. 2005. 27 Sept. 2010. <http://www.photius.com/countries/pakistan/economy/pakistan_economy_irrigation.html>.
- "Pak Needs to Improve Management of Water Resources: Clinton - Hindustan Times." *Hindustan Times: Latest Breaking News from India, Cricket, Bollywood, World, Business, Videos*. Press Trust of India, 19 July 2010. 24 Sept. 2010. <<http://www.hindustantimes.com/Pak-needs-to-improve-management-of-water-resources-Clinton/Article1-574739.aspx>>.