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India, Water Scarcity

India: Water lost to pollution

India is one of the most populous countries expected to exceed its neighboring country, China, in population in the coming future. Although the population is growing, it is growing at a slower rate than in the past. This large population growth is not due to conditions allowing all of its citizens to thrive with excellent health, however. Many of India's citizens are in poverty, illiterate, left without many of the luxuries people in other countries take for granted, and without a clean source of water. Of those in India, "76 million don't have safe drinking water" (Saptarshi Dutta). This is a problem in India as drinking unsafe water can lead to health issues such as diarrhea and can cause death. However, there are numerous groups devoted to helping people access the clean water they need.

India is expected to have over 1,380,000,00 people in the middle of 2020 and this is projected to continue to grow (Worldometer). Life in India tends to differ depending on whether one lives in an urban or rural area. In 2018 approximately 65% of people in India lived in rural areas (*Trading Economics*). Therefore around 34% of India lives in urban areas. Individuals in rural areas often face poorer conditions than in cities. India's government is a democratic republic meaning it holds features of both a democracy and a republic. The president of India is the head of India. However, the president elects other individuals to help run the government such as governors and the Prime Minister of India. Similarly to the United States, the government of India has three working parts. These consist of the "executive, legislature, and the judiciary" (Elections.in). This government has created many programs to help lessen poverty such as the Integrated Rural Development Program. This program along with many others was made to help families improve their financial situations. Many families partake in subsistence farming in which they grow their own food with the intent of eating the food they grow. Agriculture is very important to India as 60.45% of the land in India is used for this practice (*Trading Economics*). This land is where many of the major crops in India are grown from rice, wheat, various fruits and vegetables and much more. India is very important to the world as it grows more cotton than any other country (Neha Dewan). Unfortunately, the farms that grow such products are shrinking. The average family farm is only 1.08 hectares being around the size of 2 football fields (Vishnu Padmanabhan). These farm products depend on the biome which the family resides in. Much like the United States, there are deserts, snowy regions, and even tropical areas.

The typical family in India consists of the extended family. This family can live in a variety of places from the city to a village. The family will eat a variety of foods from rice, chicken, and goat meat with a total of 3 meals a day (*Food and Cultural Practices...*). These foods can be obtained from a supermarket, street vendor, or from subsistence farming. Unfortunately, only 84.53% of the people living in India have electricity and only 41.04% have the resources to cook (*Trading Economics*). Also, there

is a noticeable difference in wages between men and women. “The current gender pay gap in India stands at 19%” in which women make 19% less than men for doing similar jobs (Rica Bhattacharyya). Over half of all women work in agriculture and “nearly 60% working women in India surveyed feel discrimination at work and over one-third feel they are not easily considered for top management roles” (Rica Bhattacharyya). Men work in a variety of jobs with women doing more of the house and child care. Much of India is illiterate with more people not being able to read or write than any other country with “37% of the world total” (Nilanjana Bhowmick). However, India supplies its citizens facing financial hardship and poverty with free healthcare. Although gender inequality is seen in some of India like in numerous other countries, one of the biggest problems in India is its water scarcity.

Data collected in 2013 showed that only 30% of people living in rural areas had clean water at their disposal (Saptarshi Dutta). As 65% of the population in India live in rural areas this is a large portion of the people who inhabit the country. The water becomes unhealthy to human consumption as pollution and other materials are put into the water. Vaishnavi Chandrashekhar states that “below the bridge, a dark slurry with floating bits of plastic, cloth, and rubber slowly passes downstream”. This situation is expected to become worse as India’s population grows. More people will be in need of clean water and there will be more individuals to pollute the bodies of water in India. The unclean water has also been produced because of sewage as there is not always a place to dispose of this waste. Sewage is an individual’s human waste and should not be consumed. “Most villages have no arrangement for disposal of drainage water” or sewage (Madhura Karnik). Drinking unsafe water will have its effects on an individual no matter if they are female, male, or a child although those with weaker immune systems will be most negatively affected. Unfortunately, individuals facing poverty are stuck drinking unsafe water as they can not afford to buy bottles of water at the store. This occurs because “41% of the total population lives on less than \$3.10 per day” (*Water.org*). Drinking unclean water can lead to more of a problem than what meets the eye. “The World Bank estimates that 21 percent of communicable diseases in India are linked to unsafe water...” (*Water.org*). These diseases range from “diarrhea, cholera, dysentery, typhoid, and polio” (World Health Organization). Unfortunately, these diseases can be deadly. “More than 500 children under the age of five die each day from diarrhea in India alone” (*Water.org*). Water is becoming scarce in India as groundwater is being taken at a rate in such a way that it can not be replenished in certain areas. Groundwater is used to water crops and therefore supply people with a source of food. This situation affects the environment and marine life in India in many ways. As water is full of waste and garbage marine life suffers as this creates hazardous conditions for them to live in. When one problem occurs it often affects other aspects of life creating even more urgency for the problem to be fixed.

Much is being done to help individuals get clean water. Programs giving those in financial hardship money gives families the chance to afford the clean bottles of water that they may need. There have been plants created to manage where human waste ends up and therefore keeping waste from ending up in India’s water supply and rivers. One plant that was paid for by the UN Refugee Agency takes care of waste safely at a refugee camp (*Oxfam*). An organization, Generosity.Org, has helped provide water to those where it is scarce through drilling water while maintaining the areas they drill so that water is available for years to come (*Generosity.Org*). There are numerous organizations and projects being pursued like these that have been created to help those in need. The government of India

also has a minister in charge of the National Water Mission and part of this ministry's mission is to save water. Some efforts they have taken include making rules to make sure water is completely utilized, water recycling takes place, and allowing for new ways to get clean drinkable water. This ministry meets with other government functions in India to make sure regulations are being upheld and that water is being used as efficiently as possible (National Water Mission, et. al). Anyone can help provide water to those in need by donating to a program already put in place.

Other solutions to the scarcity of clean water could involve one collecting the sewage in a community and turning it into a fertilizer as this would ensure the sewage does not end up in water supplies. This process could supply individuals in poverty with steady employment and these individuals would then hopefully be able to afford safe drinking water. If one was interested in starting a business or non profit program they would have to educate themselves about the processes involved and then buy the equipment needed. They would have to research a specific area in India based on available land and current sewage treatments. One could also educate those where water is scarce. By educating the public about how to dispose of sewage properly and to not pollute the water with trash one could help prevent pollutants from reaching the water in the future. Providing a source of recycling for people in India would hopefully reduce the amount of plastic in their water sources. Educating the public about ways to repurpose plastic and how one can use a recycling plant to create new products could lead to more passion for bettering their community. However, in order to educate the public one would have to find a way to communicate with individuals effectively. They may have to organize a town meeting and have a speaker present as not everyone in India has the ability to read. One could create a poster board with photos or bring along internet access with a slide show as a demonstration. A translator may need to be present if individuals do not speak the language of the speaker. The Indian government has created laws to which there are fines for littering but littering still exists. The key to stopping sewage and pollutants from getting into the drinking water is making recycling accessible and properly getting rid of trash easier than littering. As accessibility to recycling is increased the more people will utilize it.

One could also raise and fund a program, starting in one village or rural area struggling with getting clean water, with the intent of providing non-electric water filters. Such filters can be made with plastic and can, therefore, be made through recycled materials helping reduce two problems at once. In order to get a non-electric filter, a family would have to provide and show their collected recycled materials. Another way in which clean water can be provided in communities in India is by creating a program where one can raise money to get gutters on all the rooftops of homes in India. After gutters are provided, the program would then educate the community on how to properly maintain and clean the gutters. "Gutters on rooftops" can "direct the flow of rainfall into a sanitary holding tank" (*Charity*). This water can then be used for safe drinking. However, in order for gutters to be installed on houses one would have to be educated in this process and know accommodations for houses unlike ones they have seen before. Rainwater could also be harvested in other ways. "In India, rainwater harvesting has been in practice for more than 4000 years" (NK Realtors). This is the practice of collecting rainwater and using it as a resource, whether that be bathing to drinking. If raising money and providing households with non-electric water filters were to occur then the rainwater collected could also be filtered. The rainwater could be collected in barrels which could have a lid during the hot days to keep animals and foliage from coming into the water supply. As many families will not have containers suitable for water to be

collected in, the program raising money for water filters could also spend its donations on the purchase of these items. The program could ask individuals if they have any barrels or large tupperware they would be willing to donate. If enough donations were made the program could then offer volunteer opportunities to students or adults to be able to travel to India and hopefully become inspired themselves to make a change. Some of the donations could then be used to fund the traveling expenses for these volunteers. One could advertise for their program in many different ways. A website could be created and have a description of the current issue in providing citizens of India with safe drinking water in hopes to intrigue readers. This website would be intended to inspire individuals in the United States as the internet has become one of the most important and influential sources of communication in the United States especially among newer generations. After creating a website one could share their ideas with businesses and see if they can find any sponsors. To learn more about water treatment processes in the United States one could visit a treatment plant and see if they would be interested in helping start a fundraiser. Flyers could be posted and shirts could be made.

Water Scarcity was and continues to be a major problem in India. As the population continues to grow efforts to help those in need are going to have to grow too. Having clean water, food, and other materials such as the telephone are often taken for advantage. Educating others on the problems and possible solutions facing the world can help others learn and fix a problem they had not known of. Others could learn that ideas do not have to come from professionals and that they too can brainstorm ideas. With only 2.5 percent of the water on Earth being fresh, keeping this water clean is vital to all creatures on Earth (Jonathan Hodgson).

Works Cited

Banerji, Annie. "India's 'Worst Water Crisis in History' Leaves Millions Thirsty." *Reuters*, Thomson

Reuters, 6 July 2018,
www.reuters.com/article/us-india-water-crisis/indias-worst-water-crisis-in-history-leaves-millions-thirsty-idUSKBN1JV01G.

Bhowmick, Nilanjana. "37% Of All the Illiterate Adults in the World Are Indian." *Time*, Time, 29

Jan. 2014, world.time.com/2014/01/29/indian-adult-illiteracy/.

"Biggest-Ever Waste Treatment Plant in a Refugee Camp Is 'Step Forward' for Safer Human Waste

Disposal in Emergencies." *Oxfam in Asia*,
asia.oxfam.org/press-release/biggest-ever-waste-treatment-plant-refugee-camp-step-forward-safer-human-waste.

Chandrashekhar, Vaishnavi. "Dying Waters: India Struggles to Clean Up Its Polluted Urban Rivers."

Yale E360,

e360.yale.edu/features/dying-waters-india-struggles-to-clean-up-its-polluted-urban-rivers.

“Climate and Average Weather in India.” *World Weather & Climate Information*,

weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine-in-India

“Competing for Clean Water Has Led to a Crisis.” *Clean Water Crisis Facts and Information*, 3 Apr.

2020, www.nationalgeographic.com/environment/freshwater/freshwater-crisis/.

Dewan, Neha. “India's Cotton Cultivation Consumes Too Much, Produces Too Little. That's

Changing.” *The Economic Times*, 4 Nov. 2019,

economictimes.indiatimes.com/small-biz/sme-sector/india-cotton-cultivation-consumes-too-much-produces-too-little-thats-changing/articleshow/71885124.cms?from=mdr.

Dutta, Saptarshi, and Priyanka Bhattacharya. “76 Million Don't Have Safe Drinking Water: India's

Looming Water Crisis: World Water Day Special.” *NDTV*, 22 Sept. 2017,

swachhindia.ndtv.com/76-million-dont-have-safe-drinking-water-indias-looming-water-crisis-5606/.

“Food and Cultural Practices of the Indian Community in Australia - A Community Resource.”

<https://metrosouth.health.qld.gov.au/Sites/Default/Files/Content/Heau-Cultural-Profile-Indian.pdf>.

“Government of India, Structure of Government of India.” *Elections in India*,

www.elections.in/government/

“Health Effects of Water Pollution.”

Girlshealth.gov,

www.girlshealth.gov/environmental/water/effects.html

“How People in India 'Really' Live.” *Population Reference Bureau*,

www.prb.org/howindianslive/.

“India - Agricultural Land (% Of Land Area).” *India - Agricultural Land (% Of Land Area) -*

1961-2016 Data | 2020 Forecast,

tradingeconomics.com/india/agricultural-land-percent-of-land-area-wb-data.html.

“India - Family Life And Family Values.” *Family Life And Family Values - Unemployment, Gender,*

Development, Children, and Indian - JRank Articles,

family.jrank.org/pages/859/India-Family-Life-Family-Values.html.

“India - Rural Population.” *India - Rural Population - 1960-2018 Data | 2020 Forecast,*

tradingeconomics.com/india/rural-population-percent-of-total-population-wb-data.html.

“India Population (LIVE).”

Worldometer,

www.worldometers.info/world-population/india-population/.

Lahiri, Tripti. “By the Numbers: Where Indian Women Work.” *The Wall Street Journal*, Dow Jones

& Company, 12 Nov. 2012,

blogs.wsj.com/indiarealtime/2012/11/14/by-the-numbers-where-indian-women-work/.

“Major Crops of India.” *GKToday,*

www.gktoday.in/gk/major-crops-of-india/.

National Water Mission, et al. “Objective of National Water Mission | National Water Mission.” *National Water Mission*, 27 Aug. 2020,
nwm.gov.in/?q=objective-national-water-mission.

Padmanabhan, Vishnu. “The Land Challenge Underlying India's Farm Crisis.” *Livemint*, Livemint,

14 Oct. 2018,

www.livemint.com/Politics/SOG43o5ypqO13j0QflaawM/The-land-challenge-underlying-Indias-farm-crisis.html.

Realtors, NK. “How Important Is Rainwater Harvesting in Indian Cities.” *Nkrealtorsblog*,

30

Mar. 2018,

www.nkrealtors.com/blog/rainwater-harvesting-in-indian-cities/.

“Solutions: Charity: Water.” *Charity*,
www.charitywater.org/our-approach/solutions/.

Turland, Ben. “Finding Food in India.” *Gap Year*, 20 Mar.
2018,

www.gapyear.com/articles/travel-tips/finding-food-in-india.

“Water In India - India's Water Crisis & Sanitation Issues In 2019.”
Water.org,
water.org/our-impact/india/

“Your Generosity Has Made Serious Impact.” *Generosity.org*, 12 Mar.
2020,
generosity.org/our-work/