

Garrett Christensen  
Kuemper Catholic High School  
Carroll, Iowa  
Iran, Factor 2: Water Scarcity

Iran: Water Scarcity (Factor 2).

Iran is a country in the middle east between Iraq and Afghanistan. “Iran is on the fast track to severe water scarcity. The semi-arid country faces an onslaught of threats to its water supply, including climate change, population growth, mass migration, political instability, and resource mismanagement” (Ritter 2021). In recent years, Iran has been in the midst of a drought that is affecting nearly the entire country. This drought has caused many to be left with little to no food, water, and money. This problem could be classified under the category of a water scarcity issue. “Water scarcity, which can broadly be understood as the lack of access to adequate quantities of water for human and environmental uses” (global water forum). According to information gathered by Global Water Forum, around one million people around the world die each year from water scarcity and water sanitation issues. According to water.org, Every 2 minutes a child dies from a water-related disease. Water scarcity doesn’t just involve the lack of water needed for a country to survive, it also involves not having clean or sanitary water. The drought that has been haunting the country of Iran for the last couple of years is one of the main causes of water scarcity issues. These water scarcity issues cause a lot more problems than just with the water. To this day the drought is still happening in Iran.

There are two types of water scarcity. They are physical scarcity and economic scarcity. The first type of water scarcity, physical scarcity, is the kind of water scarcity that is the most well-known. Physical scarcity is when physical access to water is limited or not available. Most of the time this kind of water scarcity occurs because the population’s demand for water is too great for the land to supply it. Physical scarcity for the most part is caused by natural causes. These can include being in the dry or arid parts of the world. This is the case for the cause of Iran’s problem. However Physical water scarcity can also be a result of a man-made situation. An example of how this can happen is when a water source is being overused and being over-managed. “The Colorado river basin in the United States is an excellent example of a seemingly abundant source of water being overused and over-managed, leading to very serious physical water scarcity downstream” (*thewaterproject.org*). The second kind of water scarcity is economic scarcity. Economic scarcity is a kind of water scarcity that is completely preventable. This type of water scarcity is caused by a government that sees the water scarcity issue and does nothing to try and stop it. “Economic water scarcity is about an unequal distribution of resources for many reasons, including political and ethnic conflict” (*thewaterproject.org*). Iran’s water scarcity issue also suffers from this as well.

Water scarcity is especially dangerous to children in Iran. This is because it affects not only their health, but their education and daily life as well. When children can't get water at their houses, they often have to bring some back to their house for their families. "Sharing the burden with their mothers, children around the world spend 200 million hours each day collecting water. This takes time away from these kid's school and education" (*water.org*). It doesn't only affect children, however. Young girls are also being affected by problems caused by water scarcity. Some of the reasons that young girls are affected differently are that in families with limited resources, like water, most of the resources are distributed among the males before the females. This makes it hard for them to learn the basic hygiene that they need to survive when they grow up.

"Based on the data collected over the past decade approximately 97 percent of the country is affected by long-term drought"(Ziaeian 2019). Iran has been in the midst of the country's worst drought in about a century. "Some 12.7 percent of the country is hit by extremely severe drought, 53.6 percent of the country is affected by severe drought while 24.8 percent of the country is facing moderate drought and 5.9 percent of the country is withstanding mild drought" (*tehrantimes.com*) "extremely severe long-term drought has had negative effects on 14.2 percent of the country's total population, severe long-term drought has hit 47 percent of the country's population, 30.7 percent of the country's population is affected by moderate long-term drought and 5.1 percent of the population is stricken with mild drought"(Ziaeian 2019).

There are many causes of this drought and reasons why it is not ending. The first major cause of the droughts is poor water management. The population of Iran has become frustrated with its government and its handling of the water crisis. This has led to the people of Iran starting to protest the government. The second major cause of the drought in Iran is its harsh climate that continues to get worse over time. Before and during the drought Iran has been experiencing a major decline in rainfall. The decline in rainfall is very concerning for Iran's national water supply. This problem is becoming more severe and if it isn't solved, Iran could become inhabitable. Isa Kalantari, head of the country's Department of Environment, said "by 2050, 70% of Iranians will have to leave their country due to diminished water resources". The third and final cause of this drought is population growth. While this doesn't have a direct effect on the drought, it has made it worse. Over the last couple of years, Iran's population has grown to 81 million people. This increase in population has caused the Iranian government to look towards using groundwater as a primary source of water. "Groundwater accounts for 55% of Iran's water use, and 92% of that is used for agriculture"( Novo 2020). While using water for agriculture is a good thing, it doesn't leave much water left over for the general population. To go along with that Iran has spent too much money on building dams to hold water rather than letting that water be used for irrigation purposes.

Not only is the drought affecting humans it is also affecting the animals in Iran too. The drought is causing negative effects on the livestock in Iran. Some of the effects of too little water are a weakened immune system in the animals, no grazing land, undernourished animals, and animals being easy targets for diseases and parasites. Livestock is a big part of everyday life in Iran, so having the livestock be sick and even death could be very harmful to the people. Not having healthy livestock can affect the people of Iran in many ways. These effects include less available milk and meat along with the spread of diseases.

The drought has taken many jobs from the people of Iran. There are many reasons why droughts cause people to lose their jobs. The first is the loss of jobs in the agriculture business. The agriculture business relies heavily on water for its success. They need water to irrigate their crops, give to the livestock, and clean up all of the equipment that is used. The loss of agricultural jobs also has an effect on the entire country. One of these effects is the loss of food for the rest of the population. This can end up causing a malnutrition problem if this problem continues for a long period of time. "Malnutrition is faulty nutrition due to inadequate or unbalanced intake of nutrients or their impaired assimilation or use" (Merriam-Webster).

Water scarcity in Iran is already bad the way it is today, but if this problem is not solved quickly catastrophic consequences could happen. There are many different solutions floating around the people in Iran, but no one wants to take action. The government especially doesn't seem to be in a hurry to solve this problem. There are many possible solutions to this problem if the government were to take advantage of them.

The first solution to Iran's water scarcity problem is water desalination. Desalination is "the process of removing salt, esp from seawater so that it can be used for drinking or irrigation" ( Dictionary.com). Iran is right next to the Caspian sea which can provide enough saltwater for this to work. The only problem with this solution is that the process of water desalination can be very expensive and Iran has an economic problem the way it is. Another issue of water desalination is that could cause harm to the already low water levels and this could cause more harm than good. "the current band-aid solutions in Iran will not be nearly enough. the regime must listen to experts and environmentalists. Iranian individuals must also take it upon themselves to lower their water usage" (Pourali 2020).

The second possible solution to Iran's water scarcity problem is atmospheric fog harvesting. "Fog harvesting provides an alternative source of fresh water through a technique used to capture water from wind-driven fog. Fog harvesting systems are typically installed in areas where the presence of fog is naturally high, typically coastal and mountainous regions" (*ctc-n.org*). Even though Iran isn't a coastal and mountainous region, it still gets a pretty good amount of fog which would make this a very applicable solution. The process of fog harvesting is fairly easy and is pretty cost-effective as well. The first step is to make the tightly placed vertical wires. These wires can be open, to let a lot of fog in, or they can be tight, to make sure the fog gets stuck and is able to be collected. The fog goes through the wire net and turns into water droplets. Then gravity quickly forces the water droplets down into a place where they can be collected. This is a good and effective solution to the problem because it doesn't require the government's help. Fog harvesting can be done on a small scale and on a family-to-family basis to be as effective as possible.

Iran is in the midst of one of its country's worst crises in a very long time. This crisis is the country's current water scarcity issue. Iran is located in a very dry and arid part of the world. Iran is also in the middle of a drought that has lasted for more than twenty years. This is the major cause of the water scarcity problem. Although this problem couldn't be fully prevented or completely solved there are steps that could be taken to help the situation. The first step is to raise awareness of the problem to the government. If the people in charge don't care enough to help solve the problem then not much will get done about it. Another step would be to try and solve the problem on a smaller scale. Some examples of this are reducing water usage, develop water-saving techniques, and trying out new ways to collect safe drinking water. The water scarcity issue in Iran is not going away anytime soon. It may take up to a century for things to go back to normal in Iran. It is important though for the people to not give up hope because if one generation stops the progress the problem will be back at square one.

## Works Cited

- Children's education & the water crisis. (n.d.). Retrieved from <https://water.org/our-impact/water-crisis/childrens-and-education-crisis/>
- Fog harvesting. (n.d.). Retrieved from <https://www.ctc-n.org/technologies/fog-harvesting>
- Global water shortage: water scarcity & how to help - Page 2. (n.d.). Retrieved from [https://thewaterproject.org/water-scarcity/water\\_scarcity\\_2](https://thewaterproject.org/water-scarcity/water_scarcity_2)
- Kayla Ritter. (2018, December 19). Tehran faces crisis as Iran's water supply runs low. Retrieved from <https://www.circleofblue.org/2018/middle-east/tehran-faces-crisis-as-irans-water-supply-runs-low/>
- Sadeq Ziaecian. (2019, February 01). 97% of Iran affected by long-term drought: Expert. Retrieved from <https://www.tehrantimes.com/news/432532/97-of-Iran-affected-by-long-term-drought-expert>
- UN-Water. (n.d.). Scarcity: UN-Water. Retrieved from <https://www.unwater.org/water-facts/scarcity/>
- Understanding water scarcity: definitions and measurements. (2020, January 12). Retrieved from <https://globalwaterforum.org/2012/05/07/understanding-water-scarcity-definitions-and-measurements/>