

Tatum Hines
Garner Magnet High School
Garner, North Carolina, USA
Egypt

Egypt: A Water Crises

A Water Crisis

Drinking water in Egypt, which comes from the Nile River, may not be potable soon. This is a huge crisis for the Egyptian population because this would mean not being able to drink or use the water for immediate use to irrigate crops. The Nile is the main source of drinking water for Egypt and it is in danger because of trash, agricultural runoff and industrial waste causing increased pollution.(Farid,2020) On top of all this, the water treatment plants in Egypt do not work well because they are not maintained properly. If changes are not made soon and work is not done to clean the Nile River, Egypt will be in big trouble .

Egypt had 102.3 million people in 2020. Urban areas accounted for 48.78% and 57.30% rural areas. Egypt has a mild winter and a scorching hot summer because of its desert region. The Nile River is the main source for drinking and crop irrigation. By law, farmers are only allowed to own 21 hectare; one hectare is equal to 2.47 acres of land. The area of agriculture is mainly on the banks of the Nile River which offers easy irrigation and fertile soil crops. Egypt's agriculture industry is the main source of employment for the country so if the main water source becomes unusable, people will lose their jobs as well as their water to drink. A quote from the website water.fanack.com(Aman, 2018) sums it up perfectly, "A high level of contaminants in irrigation water increases the concentration of these contaminants in soils and subsequently in fruits and vegetables." The water used to irrigate the crops is not fit for consumption.

The pollution becomes much worse where the river runs through the densely populated urban and industrial center of Cairo and the delta region. Wastewater treatment plants dump water into the Nile River annually, as well as the trash, and industrial waste that happen daily. Heavy metal is a huge problem at the river surface and this could be toxic to humans as well as the environment. Metals are non biodegradable, which means it won't break down. If fish are eating and drinking from this water, people who consume the fish are eating this metal. Egyptians consume a lot of fish, so this is a public health concern.

There are organizations that are trying to clean up the Nile River. From the website verynile.org; "VeryNile is the first initiative to develop sustainable means to clean the Nile while raising awareness on the importance of protecting our environment." This organization has 4500 volunteers and have removed 100 tons of garbage from the Nile. They want to clean the river

and raise awareness about reducing plastic consumption. By going out and using fishing nets they are working to clean the trash out of the Nile River, which is a great start, but will only scratch the surface.

A way to clean the wastewater contaminants from agricultural runoff is bioremediation. This process uses naturally occurring or deliberately introduced microorganisms or other forms of life to consume and breakdown environmental pollutants, in order to clean up a polluted site. From this article I learned the organisms used in bioremediation, www.peertechzpublications.com (Wassie,2017) “Bacteria, archaea and fungi are typical prime bioremediators. The application of bioremediation as a biotechnological process involving microorganisms for solving and removing dangers of many pollutants through biodegradation from the environment” However, there are pros and cons to this process. The pros are that it is not harmful to the fish, animals and humans. It costs less than conventional treatment methods, typical costs are from \$30 to \$100 per cubic meter. Also this process does not require skilled manpower. A fact I learned(2019) Livemint.com “It has been found that as a result of this process, heavy metals and toxic chemicals are also reduced.” This is good news because it could clean the water from the metals and help the fish and the source of food for the Egyptians. A con could be some sources say that it takes a short amount of time to work, but others say that it takes a long time so it is unclear on timing. There are many claims that this process is not great and could potentially cause more harm than good.

Once the Nile River is cleaned, the people should be taught proper ways to stop runoff from the crops, industrial waste would need to be stopped and people would have to stop polluting. There would need to be better environmental laws to protect the Nile River. A quote from water.fanack.com(Aman,2018) said it perfectly, “Urgent action is needed to curb this phenomenon, such as the inspection and monitoring of industrial, irrigation and domestic discharge facilities to ensure compliance with Egyptian laws.” Laws would need to be enforced or the process of working to clean the water will be useless. The people who benefit from this water source should be educated on the consequences of harming the environment by polluting water sources. Of course, the rich would not be as impacted as the poor. Egypt is a third world country and according to Galal, Mar 29, 2022 www.statista.com 30.6 million people are considered below poverty level. They are the ones who will not have the opportunity to purchase water or imported foods that are clean and not tainted by the pollution. Many have to fish the Nile River to eat and they are getting sick from the toxins, but it is one of their only food sources and they have to eat.

Another important fact is the problem facing the Nile River pollution is not only affecting Egypt, it is also affecting other countries. The Nile River is the largest river in Africa which runs 4132 miles long and through eleven countries. The Nile River is the main water source for Ethiopia, Sudan and South Sudan as well as Egypt, The combined population in the Nile Basin is approximately 257 million. That is a lot of people who are at risk of becoming sick, not having a job or being able to get food if the clean up efforts do not start soon.

It is very important to have clean water, unfortunately for those who get their water from the Nile River time is running out for them. There are solutions to this problem, but it has to be tackled now and it will take the whole country to make progress. My family is from Egypt and my mom has always said that we can't drink the water from the tap or even wash food with that water because it will make us sick. The people who live there are probably more accustomed to the contaminated water and won't get sick like us, but who knows the effects long term. The Nile River should be a huge priority and work with the organizations that are willing to help with the clean up and environmentalists who can show them ways to clean the water. If this problem continues, this could lead to the worst water crisis Egypt has ever had.

Cleaning the Nile, One Kilo at a Time!, 2022)

Verynile.org. 2022. *VeryNile | Cleaning the Nile, One Kilo at a Time!*. [online] Available at: <<http://verynile.org/index.html>> [Accessed 25 February 2022].

emspub.epa.gov. 2022. [online] Available at: <<https://sempub.epa.gov/work/HQ/401583.pdf>> [Accessed 25 February 2022].

(Water dispute on the Nile River could destabilize the region, 2022)

USC News. 2022. *Water dispute on the Nile River could destabilize the region*. [online] Available at: <<https://news.usc.edu/188414/nile-river-water-dispute-filling-dam-egypt-ethiopia-usc-study/>> [Accessed 25 February 2022]

(Bioremediation Definition, 2022)

Investopedia. 2022. *Bioremediation Definition*. [online] Available at: <<https://www.investopedia.com/terms/b/bioremediation.asp>> [Accessed 25 February 2022].

(Nile Pollution: Causes and Solutions - Fanack Water, 2022)

Fanack Water. 2022. *Nile Pollution: Causes and Solutions - Fanack Water*. [online] Available at: <<https://water.fanack.com/specials/nile-river-in-egypt/nile-pollution/>> [Accessed 25 February 2022].

Egypt - (Fanack Water, 2022)

Fanack Water. 2022. *Egypt - Fanack Water*. [online] Available at: <<https://water.fanack.com/egypt/>> [Accessed 25 February 2022].

Farid, Farid. "The Mighty Nile, Threatened by Waste, Warming, Mega-Dam." *Phys.org*, Phys.org, 20 Mar. 2020, <https://phys.org/news/2020-03-mighty-nile-threatened-mega-dam.html>.

Another important fact is the problem facing the Nile River pollution is not only affecting Egypt, it is also affecting other countries. The Nile River is the largest river in Africa which runs 4132 miles long and through eleven countries. The Nile River is the main water source for Ethiopia, Sudan and South Sudan as well as Egypt, The combined population in the Nile Basin is approximately 257 million. That is a lot of people who are at risk of becoming sick, not having a job or being able to get food if the clean up efforts do not start soon.