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Somalia: Education, Water and Sanitation

Somalia: Improving Water Quality and Accessibility

Somalia officially known as The Federal Republic of Somalia is a country located in the Horn of Africa, to the east of the African continent. It is bordered to the west and northwest by Ethiopia and Djibouti, to the south by Kenya, to the north by the Gulf of Aden, and to the east by the Indian Ocean. Somalia is a country of geographic extremists. Somalia's government consists of regional leaders appealing to the president and the prime minister. The type of government is Republic, a Federal republic, and a Parliamentary republic. Somalia takes place in a framework of a federal parliamentary representative democratic republic. According to the constitution of Somalia, the President of Somalia is the head of state, and the prime minister is the head of the government who is appointed by the President with the parliament's approval.

It also establishes a bicameral legislature which consists of the Senate and the National Assembly of Somalia to create the Federal Parliamentary Republic. The climate is mainly dry and hot, with landscapes of thorn bush savanna and semi-desert, and the inhabitants of Somalia have developed equally demanding economic survival strategies. The major cereal crops cultivated are Sorghum and maize. Both crops are grown under rain and under irrigated conditions. Commercial crops such as sugar, cane, bananas, grapefruits, and rice were also successfully cultivated in the south along the two rivers. Its topography ranges from hilly in the north, where the land rises to between 900 and 2,110 meters above sea level, to flats in the central and southern regions.

The total percentage of the population is 15.9 million people which is divided into two main parts, 47.9% is urban and 53.7% is rural. Each family size in Somalia is about 6-8 people, and about 10 percent of the total area of Somalia is classified as suitable for agricultural production, of which 3 percent is actually under cultivation. Agricultural land was 70.34% in 2018, only 1.6% of Somalia's total land area is Cultivated and 69% is permanent pasture (FAO 2012). The typical Somali house is either a cylindrical hut with a conical thatched roof or a rectangular hut with an angular roof of thatch or metal. According to the latest available information, the total number of housing units was 710,000 with 6.8 people per dwelling.

Because of the amount of population the country has and the number of people they have living in their dwelling, there isn't that amount of jobs in Somalia. The most important sector for working in Somalia is agriculture, the employment is around 70% of the workforce with livestock comprising approximately 40% of the country's GDP. Other important industries are telecommunication and manufacturing. There aren't a lot of good opportunities to work or to establish a good life in Somalia being the pay hours about 16.23 dollars per hour. Because of this Somalia is known for being one of the poorest countries in the world.

Somalia has one of the lowest primary school enrollment rates in the world. Just 30% of all school-age children have access to learning opportunities, with over 3 million children remaining out of school. Those in South and Central Somalia are affected the worst. The health care system in Somalia remains

weak, poorly resourced, and inequitably distributed. Health expenditure remains very low and there is a critical shortage of health workers. As a result, around 3.2 million women and men in Somalia are in need of emergency health services. To continue talking about health care, only 52% of the population in Somalia has access to a basic water supply. Limited regulation of private water suppliers often leads to expensive prices, forcing families to fetch water from far and from unsafe open wells. Electricity only around 16% of the families have access to. Most are rural areas where roads are not accessible to drive or walk.

Access to clean water, education, and electricity and one of the most important issues is security and corruption. All these are very important topics that Somalia has to face. But the most important topic is food security. About 50% of the population doesn't have enough food to eat or bring home for their families. All this has to be related to water scarcity and agricultural issues. Over 2.6 million people in Somalia are facing water shortages due to severe drought conditions in Somalia. The Somali citizens have faced a series of failed seasons over the past years starting from 2020 and 2021 as well as the climate forecast for the coming years. If there is a continuation of the fall of rainy seasons, this obviously will impact farmers in terms of how much they will be able to produce and harvest, including livestock owners. In these past years, there have been a lot of similarities compared to the drought that Somalia faced in 2017 and 2016 which were considered to be one of the worst droughts in history.

The poor rural population lack access to basic water supply (900 million) and safe sanitation, which results not only in tremendous human health and economic costs but also creates gender and other societal inequalities. The majority of the rural population in the developing world are illiterate, unskilled, and composed. Somalia is a country where the population increases quickly and it could be one of the main problems that lead to growing pressure on water resources in urban and rural areas. The demand for water is rising constantly. With the water demand exceeding water supplies, the accessibility of health care for everyone in Somalia is going to be harder and will have a higher cost to achieve. Water shortage has become more prominent in urban areas in Somalia.

Since the urban areas get 50% of water and sanitation in the country the city has been an accessible way to get water and have a good quality of healthcare. Rural areas don't have the same quality of clean water and the proper healthcare for all people that live in this zone. Considering that each rural area in Somalia is very far away from the urban areas and from the areas where water is more accessible for people. It has become a very hard way to get clean water afterward, the rivers and any natural resource that contains natural water in Somalia is not 100% safe for people to use for personal use and for survival. Since the majority of water is contaminated the only way that they can access clean water is by traveling to the urban cities in Somalia and traveling to the coast of their country.

Water scarcity and contamination disproportionately impact low-income women and girls. For many girls who must walk miles to access clean water, school is not a reality. Without a basic education or the ability to get a formal wage-earning job, many women become locked into a vicious cycle of poverty. Somalia has one of the lowest primary school enrollment rates in the world. Just 30% of all school-age children have access to learning opportunities, with over 3 million children remaining out of school. Those in South and Central Somalia are affected by the worst opportunities. However, there isn't a lot of

For the past few years, there is no information that Somalia is getting better with water scarcity. But nearly 90% of Somalia is now in a severe drought, following three consecutive failed rainy seasons. Some areas are facing their driest season in 40 years. The government and many other associations have had the idea of helping Somalia battle water scarcity, but many of these projects haven't worked at all, because of the deteriorating economy in Somalia. Actually, it is not required to have a big budget for the economy in order to solve the problem of water, trends contribute to many projects that might help Somalia get rid of or get better water scarcity. These trends contribute to many states and communities in Somalia in which people from other countries and citizens help each other.

As a result of all these problems that Somalia is facing, the government is trying to have better solutions for solving these problems that are currently hurting the citizens in Somalia. Initially, we all need to have a consciousness of problems, -solving skills, strengths, and weaknesses about the solutions we are going to apply. We also need to be sure that we are not going to harm any other point in Somalia's society. For our first point, we can start with pollution control and better sewage treatment. Starting with the removal of impurities from wastewater, aquifers, or natural bodies of water such as rivers, lakes, estuaries, and oceans. Since pure water is not found that much in nature, any distinction between clean water and polluted water depends on the type and concentration of impurities found in water as well as on its intended use.

In other terms, water is said to be polluted when it contains enough impurities to make it unfit for a particular use, such as drinking, health or personal use. Although water quality is affected by natural conditions, world pollution usually implies human activity as a resource of contamination. Let's talk about Development in sewage treatment, when small amounts of sewage are discharged into flowing bodies of water, a natural process of stream-self-purification occurs. Densely populated communities generate such large quantities of sewage, however. Dilution alone does not prevent pollution. Instead of discharging sewage directly into a nearby body of water, we need to apply the process first passed through a combination of chemical, physical and biological processes that remove some of most of the pollutants in water.

Desalination and water recycling are one of the most effective and common ways to save and protect water. This is the process that takes away mineral components from saline water. Desalination refers to the removal of salts and minerals. The first issue is soil desalination, which is an issue in agriculture. Saltwater (seawater) is desalinated to produce water suitable for human consumption or irrigation and also has a big impact on agriculture. The main point is to focus on cost. Effective provision of fresh water for citizens' use. Along with recycled wastewater, it is one of the few rainfall-independent water resources. Boiling and re-condensation of seawater to leave salt and impurities behind. The desalination process is a very easy way to have clean water resources in Somalia, however, this is a very expensive system, and not all countries have the right budget to purchase this system.

In this case, we will have to purchase the cheapest method of desalination named "Solar stills" which consist of saline water that is evaporated by the solar heat and condensed to become fresh and clean water. However this is a very old system, but many researchers have delivered information that this system is a

very safe and useful tool for the citizens to get clean and safe water for their own healthcare. For these regions, it will be very useful because of their climate. In Somalia, the weather is very sunny on the coast, tropical, and in some of the regions is cloudy and windy. If we don't have the right climate this process will be very slow and it's not going to be suitable for large consumption needs. Since if we don't have the right climate Somalia will be able to have 6 liters per normal day (day without enough sun).

The earth is 70% water, but almost all of the liquid is seawater we humans cannot drink. As the population in Somalia keeps growing and the temperature rises, the water crisis in Somalia is worsening each day. One of the best ways to get over this water crisis is fog harvesting. This means that we can harvest the water that is possible to drink.

Being the last point of view in problem-solving skills, we need to get the advantage of the new technology involving new alternatives to solve these issues. Cloud harvesting or commonly known as cloud seeding is a type of weather modification that aims to change the amount or the conditions of the precipitation. It has been done from the air so airplanes have racks on them where these same flares are positioned on the airplane. By this, the airplane flies into the storm in order to reduce the cost of the client and as well reduce our carbon footprint. Usually, they've been able to station these on the ground so they are more accessible to citizens and for their own management. Inside the canisters are flares with the seeding agents. The canisters are used as sparks from reaching the ground.

The primary seeding agent in this Silver Iodide, a simple compound, is polar in nature like water so there are chemical properties that help attract water molecules to Silver Iodide. As an example, its structure is molecularly similar to ice. So it helps moderate the generations of ice build-up and then that becomes a result of hailstone or as snowflakes that fall to the earth primarily as rain. So one flare like this has billions and billions of potential sites for that water to congregate around the environment. Each flare is built up of Silver Iodide, which is biologically inert so it will not interact in a negative way with plants or animal life. Iodide is actually a critical building block of a number of hormones.

Cloud seeding is one of the most successful ways that countries can have access to water. As well it creates a good environment for agricultural practices to build up more employment opportunities for the unemployed. The increase in these practices could spread to arid areas where cloud seeding has been successful and continue to create more agro-economic opportunities. To make all realize the implementation of all these projects, Somalia will take into consideration the following organizations. World Meteorological Organization (WMO) this organization is a specialized agency provided by the United Nations, this organization is in charge of the international cooperation and coordination on the behavior of the Earth's atmosphere, its interaction with the land and oceans as well with the weather and climate. WMO will help by the coordination and the implementation of the projects. The Food and Agricultural Organization (FAO) as well as WMO is a specialized agency of the United Nations that fights and leads international efforts to defeat hunger.

To conclude, Somalia is a country which is currently facing social, environmental, and economic issues during the past years. However, Somalia is getting a lot of support from its government and several organizations and nations. The project doesn't finish here, Somalia has a lot to face through starting by improving the projects that are affecting the country the most. That is our starting point, in this way we will be implementing different solutions to the following problems. We hope that the aforementioned projects will be for the benefit of Somalia, which urgently needs them. Being our only source of importance to maintain and ensure the safety and well-being of the citizens of Somalia and their nation.

It is a very amazing and positive experience that we all can do to help this country. By having a big impact on changes in society, by just giving importance to environmental care. With these changes and several projects, Somalia is going to be a better nation for its own citizens, in which all people living in the different sectors in Somalia are going to have the opportunity to have access to clean and fresh water.

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