



# **GECMUN IX**

## **BACKGROUND GUIDE**

### Economic and Social Council

*Responding to global water crisis caused by climate change, conflicts and waste*

SDG: 3. Good Health and Well-being, 6. Clean Water and Sanitation, 17. Partnerships to achieve  
the Goal

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## Committee Introduction

The Economic and Social Council, also more commonly known as the ECOSOC committee, is a fundamental entity within the United Nations, being the centre for initiation of the most effective response to various crises around the world. The ECOSOC committee, as the name suggests, primarily focuses on identifying and handling social, economical and environmental issues around the world. As such problems vary from region to region, it is crucial that the ECOSOC maintains effective communication with not only the other UN committees, but with other subsidiary bodies such as regional commissions. However, as the United Nations is a cooperative entity, the ECOSOC stands pivotal in facilitating communication between the subsidiary bodies and the rest of the United Nations.

The ECOSOC committee, in order to mitigate related global issues, first identify exigent economical, environmental or social crises. Based on the identified issue and the impacted areas, the ECOSOC immediately brings together a forum with related subsidiary bodies and UN committees in order to develop necessary policies and solutions to mitigate the problem. As with most other UN committees, the ECOSOC committee aims at achieving the 2030 Sustainable Development Goals of the United Nations (SDGs).

The solutions found within the forums are then suggested to the rest of the UN body in order to promote and synchronize appropriate action as a response to the crisis. Once the action is taken, the ECOSOC committee oversees its progress in order to make additional adjustments to policies or plans.

Most recently, the ECOSOC declared the Covid-19 pandemic to be a global economic and social crisis, in accordance with reports given by WHO (World Health Organization). In response to this situation, the ECOSOC immediately opened a forum with subsidiary bodies in order to create policies for promoting recovery from the economical and social shock inflicted by the coronavirus. Their actions included but were not limited to the mobilization of global resources in order to stabilize the disrupted economy while encouraging global vaccination to secure social instability. Their preparation for further future shocks is still an ongoing process, with the Covid-19 pandemic still impacting a majority of the world.

In the past, ECOSOC has dealt with other devastating issues as well. For example, in 2008, the ECOSOC played a crucial role in finding immediate remedies to the global food crisis. The ECOSOC coordinated national and international entities in order to address the cause of food price inflation. The ECOSOC worked to find immediate short-term remedies to the situation with the goal of reducing severe hunger issues.

## Agenda Introduction

The global water crisis and water scarcity have been among the world's biggest problems for a very long time. According to UNICEF, water scarcity is not uncommon even in countries with adequate water resources. Though good progress has been made, 771 million people worldwide still lack access to safe water, and nearly 2 billion do not have basic water services at their healthcare facilities. The crisis also disproportionately affects women and girls, who spend an estimated 200 million hours globally every day collecting water for their families.

Our ECOSOC committee's goal is to combat this global issue and respond to the problems surrounding it. There are a significant number of issues that contribute to the crisis, including but not limited to unequal distribution of water, water waste, contaminated wastewater, climate change, and lack of water-related infrastructure. These are just some of the various broad issues related to the crisis that Delegates could choose to prioritize. As the scope of the issue is so broad, Delegates are encouraged to approach the conference with broader—but still meticulous—propositions and solutions that apply to not the specific needs of an individual country, but rather to a wider number of regions.

There is an overall lack of data on water quality around the world, as well as a severe lack of international cooperation on the issue. The ECOSOC, through this agenda, aims to promote international cooperation in order to come up with solutions and mechanisms that can be employed to combat the crisis and provide relief to millions.

## Letter from the Chairs

Greetings to all delegates of the 2023 GECMUN ECOSOC committee! My name is Bella Kim, and I will be your Head Chair for the ECOSOC committee. I am currently a junior attending Busan Foreign School. This is my fourth year participating in MUN, and my third year participating in GECMUN. MUN provides a unique opportunity of interacting with people with common interests but different backgrounds, which has motivated me to continue building my experience at MUN. I am thrilled to meet all the participating delegates and help them have a positive experience at MUN as well. As a head chair, I will put my best efforts to make this year's GECMUN a memorable experience for all delegates.

Hello, all delegates of the 2023 GECMUN ECOSOC committee! My name is Youseung Kim, and I am the Deputy Chair of this committee. I am a junior at Busan Foreign School and have been doing MUN since middle school. I have participated in many different MUN conferences, both online and in person, but this will be my first time chairing one. Furthermore, I am extremely excited about this opportunity and will work my hardest to make this conference enjoyable and memorable. ECOSOC is a committee typically for novices, and I will put in my best efforts to assist all delegates and ensure a fun experience. One of my favorite parts about MUN is that I always leave a conference having made new friends. As we finally return to an in-person GECMUN conference, I can't wait to meet all the delegates.

Welcome, all delegates of the 2023 GECMUN ECOSOC committee! My name is Chloe Chung, a sophomore at Busan Foreign School, and I have the honor of being the Associate Chair of this committee. I've been to several MUNs as a delegate, but this will be the first time participating as a chair, and I remember the first time I participated in MUN. I was nervous, and I had so many questions about everything. Some of you may have similar problems, especially if you are relatively new to MUN. However, I can assure you that you can approach me anytime you need to ask questions, even if you think the questions are silly. I look forward to seeing you all at the 2023 GECMUN.

If you have any questions, please feel free to contact us at:

2024kimb@bfs.or.kr (Head Chair)

2024kimy@bfs.or.kr (Deputy Chair)

2025chungc@bfs.or.kr (Associate Chair)

Kind regards,

Bella Kim, Youseung Kim, and Chloe Chung.

## Key Terms

### Water scarcity

Water scarcity refers to the lack of water supply to meet the demands of people who require it. Water scarcity can be caused by various factors including insufficient infrastructure for water distribution, excessive demand for water, or failure of institutions to equally distribute water.

### Freshwater

Freshwater refers to naturally occurring water that is relatively low in concentration of salt. Thus, seawater is not considered to be freshwater. The low salinity of freshwater often allows it to be used for drinking or irrigation purposes. Freshwater is mostly collected from precipitation, rivers, lakes, ponds or reservoirs.

### Saltwater

Saltwater refers to water that is high in salinity. The largest source of saltwater is the Earth's oceans. Unfiltered saltwater often damages agricultural land and is not usable for drinking purpose.

### Groundwater

Groundwater refers to water that is found between open spaces in the soil, sand and rock. The majority of our drinking water is groundwater, most of which are stored in aquifers. Groundwater can be replenished naturally through melting of glaciers or precipitation, however, as this is a slow process, groundwater can be quickly depleted.

### Wastewater

Wastewater refers to used water. Used water can include water from the shower, toilet, washing machines, sinks and dishwashers. Wastewater contains human waste, food scraps, soap, and other substances that contaminate the water.

### Hygiene

Hygiene refers to the conditions that are maintained or practices that are executed in order to keep oneself and the environment clean. The main purpose of hygiene is to prevent diseases and stay healthy.

### Sanitation

Sanitation is the promotion of hygiene. Thus, sanitation is the act of maintaining a clean environment in order to prevent outbreaks of diseases, and other health complications.

## **Irrigation**

Irrigation is a method of providing the crops with water from natural resources such as ponds, lakes, rivers or sometimes even reservoirs. Irrigation contains channels that transport water from the natural resources directly to the farming land, which allows the crops to be watered at specific frequencies.

## **Water purification**

Water purification, also known as distillation, is a process of removing certain impurities from the water. Water, when it is first collected, contains many molecules, bacteria, biological contaminants, and microorganisms that may cause health problems if consumed. Therefore, the water purification system removes these impurities to convert collected water into safe drinking water.

## **Aquifers**

Aquifers are bodies of porous rocks, gravel and sand that stores groundwater. The empty spaces within the aquifers allows water from the environment to seep into the aquifers. The collected water can be brought back up to the surface through wells, springs or manual pumping.

## **Desalination**

Desalination is the process of removing minerals and salt from water. This process is most often used to purify seawater and convert it into drinkable freshwater. Desalination is the most widely used method of supplying freshwater to the people, as natural freshwater is extremely scarce.

## Historical Background

“Saving our planet, lifting people out of poverty, advancing economic growth... these are one and the same fight. We must connect the dots between climate change, water scarcity, energy shortages, global health, food security and women's empowerment. Solutions to one problem must be solutions for all.” - Ban Ki Moon

The planet we live on mainly consists of water; more than 70 percent of the Earth's surface is covered with water. This prioritizes the question of the 'Water Crisis' as one of the most significant issues discussed at an international level.

The water crisis, directly linked to water scarcity, is defined as the lack or inability to access clean, safe water supplies. This can be traced back to the 1700s, in which the rapid development and industrialization in the UK required clean water supplies. Further, moving into the 1900, there had been records of 11 billion people dead due to the lack of water. Soon after, the UN recognized March the 22nd as World Water Day, highlighting the importance of clean water and the impending problem of the water crisis.

Understanding the proper context of the water crisis allows the committee to comprehend the gravity of the issue. Generally, countries that suffer from water crises lack usable freshwater. For instance, the Middle East and North Africa continue to suffer from water scarcity. Temperatures are increasing, and rainfall amounts continue to decline due to climate change. India being one of many countries having uncertainty in their agricultural sectors due to the water crisis.

Even if some countries have access to freshwater, they are often faced with the problem of sanitation. According to the World Health Organization, 2.2 billion people lack access to safely managed drinking water services, and over half of the global population lack sanitation services. Children and women are most affected by this, as children are more susceptible to the diseases within the dirty water, and the women are burdened with the task of carrying water for thousands of kilometers. The lack of freshwater has led to the death of 800 children, daily, due to the water causing major health risks such as diarrhea.

The international community has come to a consensus that the 'Water Crisis' is real and needs to be addressed effectively. This has led to noticeable initiatives such as Sustainable Development Goal 6 and other inter-governmental efforts. Additionally, by achieving so, families will be able to practice good hygiene, allow children to receive better education, allow women to focus on parenthood, and allow countries depending on agriculture to be more productive and achieve economic growth.

## Current State of Affairs

The cause behind such a global problem varies from region to region, but there seems to be a common factor; agriculture. In the Middle East region, one that suffers most from the water shortage, around 85 percent of the freshwater withdrawals go towards the agricultural sector. The problem is not simply that much of these countries' water goes towards agriculture. It is how the water is used, the crops cultivated, and the region's response is unsustainable. Currently, the U.S. and Canada are the only countries using more water per capita than Saudi Arabia. Given that this region has consistently suffered from a shortage of freshwater, these statistics raise many concerns.

Another noticeable factor is pollution triggered by human activities. The exploitation of groundwater to get daily water has resulted in severe arsenic at toxic concentrations in South Asia. Coastal areas in some regions have increasingly suffered from contamination from sewage waste disposal, which has harmed water quality across South Asia. While much water pollution comes from improper industrial, domestic and agricultural waste disposal practices, fecal matter is another significant factor contributing to water contamination.

Although not perfect, the aforementioned problems may be addressed with the cooperation of the member states in the United Nations and each member state's efforts. Governments in the Middle East region have realized the importance of efficient water use, especially in the agricultural industry. In 2019, Saudi Arabia launched a national program called "Qatrah," to reduce water consumption by about 43%.

As for the shortage of freshwater, creating freshwater through desalination sought the attention of multiple nations in the Middle East region. Israel, Saudi Arabia, and the United Arab Emirates are some of the leading nations of desalination plants. As the access to clean water is on the United Nations agenda, international organizations such as the World Bank have been providing financial and advisory services to areas in distress. The World Bank and the government of Bangladesh signed an agreement to support its citizens with access to hygienic sanitation facilities and clean water in rural areas.

Direct physical re-distribution of water may be a difficult, if not impossible, goal to achieve. Yet, it is clear that the cooperation of the UN member states to address the discrepancies in access to water can generate a positive change to the ongoing crisis in our world.



## Stances of Parties

### Brazil

Brazil is the country with the highest volume of renewable freshwater resources in the entire world. With approximately 8,233 cubic kilometers of freshwater, Brazil alone accounts for 12% of the world's freshwater resources. Brazil's Amazon region contributes heavily, accounting for 70% of that. Even despite these resources, extremely populous regions like São Paulo struggle with severe drought, and poorer neighborhoods find access to freshwater a challenge.

### Russia

Russia has the second-highest volume of renewable freshwater resources in the world at approximately 4,508 cubic kilometers. Russia holds many rivers, man-made reservoirs, and lakes, including Lake Baikal, the largest and deepest freshwater lake in the world by volume. The lake contains 22-23% of the world's fresh surface water, more than all the USA's Great Lakes combined. However, the lake's volume has been decreasing due to climate change. Despite a large amount of freshwater, Russia also suffers from extremely unequal distribution of water resources. The central and southern regions of European Russia, despite containing 80% of the country's population and industry, have only 8% of water resources.

### Canada

Canada has a very large volume of freshwater resources, at approximately 2,902 cubic kilometers. Most of that freshwater comes from its river system and lakes, as well as from underground, in ponds or glaciers. The underground water is mostly nonrenewable. Canada's climate crisis, however, has been becoming a water crisis in the last 20 years, 2021 being an especially bad year. Widespread drought, floods, wildfires, permafrost thaw, and glacier retreat damaged lakes, ecosystems, and agriculture. Canada's lake water quality has declined over time, and groundwater has become increasingly contaminated, with drinking water supplies being unsuitable in many indigenous communities.

### Qatar

Qatar has been challenged in terms of water security for a long time. As an arid country with very little annual rainfall, it has often been described as one of the world's most water-stressed countries. Qatar has the highest level of risk from water scarcity in the world according to the World Resources Institute. However, it has also been making extreme progress towards becoming water-resilient. With very limited freshwater supplies in the form of aquifers that are being withdrawn faster than they are being refilled, Qatar has turned to relying on a desalination system. Qatar's desalination plants do have their flaws though—being expensive, consuming a lot of energy, not being very environmentally friendly, and being vulnerable to crises. Water storage has also been a problem for Qatar. In 2010, Qatar only had

around 48 hours' worth of water in emergency storage. However, this is being addressed through the country's record-breaking Water Mega Reservoirs Project.

### **Israel**

Israel is another country with very limited freshwater resources, its major sources being aquifers and its Lake Kinneret. Throughout history, Israel, which is more than half desert, has suffered from uneven distribution of water, overconsumption, chronic water shortages, unexpected droughts, and more. Its rapidly growing population has led to increased water demand, so much so that by 2015, the gap between demand and available natural water supplies hit 1 billion cubic meters. The World Resources Institute ranks Israel at the second-highest risk to water scarcity in the world, only after Qatar. However, Israel is also an example of a country that, through innovation, has made significant progress towards beating its water crisis. Israel has utilized water transportation networks, innovative irrigation technology, and desalination plants. The country also leads the world in wastewater reclamation for agriculture.

### **Lebanon**

In 2021, UNICEF reported that more than 71% of Lebanon's population faced critical water shortages. The country's water challenges have been exacerbated by the country's economic crisis (skyrocketing prices making water even harder to access), ongoing droughts, the pandemic, and the 2020 Beirut explosions, which damaged infrastructure. Its most vulnerable residents along with its large refugee communities face the most struggles. Health centers around the entire country, including the capital, face life-threatening water shortages. After Qatar and Israel, Lebanon has the third-highest risk for water scarcity. Though the country has staved off a total collapse of its water infrastructure, its water supply systems are poorly managed and on the brink.

### **Iran**

Water scarcity is quickly becoming a very prominent issue for Iran. In the last two decades, the country has lost more than 200 cubic kilometers of its total water storage and its groundwater levels have dropped by around 28 centimeters per year on average. Iran is very vulnerable to climate change, droughts, and flash floods. It ranks fourth-highest for risk for water scarcity. Iran's environmental devastation, including drying rivers, vanishing lakes, shrinking wetlands, declining groundwater levels, desertification, pollution, wildfires, has been continually impacting its water problem, and the government's failure to effectively act has made the situation worse than ever.

### **Jordan**

Jordan is described by UNICEF as the second most water scarce country in the world. Its annual renewable water resources are less than 100m<sup>3</sup> per person. Though 93% of its

population has access to a safely-managed water source, an increase in water demands caused growth in population and industrial/agricultural capacity have led to such scarcity. An influx in refugees has contributed to increasing demand as well. It is predicted that 90% of Jordan's low-income population will endure severe water insecurity by 2030. Additionally, groundwater basins, which account for 54% of Jordan's water supply, are being overexploited past their capacity and aren't being replenished fast enough.

### **Libya**

Libya faces critical water stress and is ranked sixth-most water stressed country globally. It is said that over 4 million people including 1.5 million children are subject to face water problems in Libya if the prolonged crisis is not addressed. Libya has relatively high water consumption per capita, with most of its water coming from unsustainable groundwater aquifers. Those aquifers are part of Libya's Great Man-Made River Project, which provides over 90% of the country's water. While scarcity itself is a problem for Libya, political governance and mismanagement are perhaps even bigger problems involved with Libya's water crisis. Droughts are also a constant looming threat in the dry region.

### **Kuwait**

Water scarcity in Kuwait like in many other regions is associated with an increasing level of demand. Rapid population growth, urbanization, and overconsumption is causing Kuwait to face increasing challenges with water. Additionally, increasing food demands, climate change impacts, wasted water, inadequate water reuse, and depletion of groundwater resources are some more leading causes of Kuwait's water crisis. Kuwait also has a large dependency on desalination for its water, 84.8% of its municipal water demands being supplied by it. Kuwait still needs to develop its wastewater treatment and reuse systems and needs to minimize water losses from leakage. Kuwait is ranked 7th for risk from water scarcity.

### **Saudi Arabia**

Saudi Arabia is one of the world's most water-scarce nations on the planet, despite the fact that 97% of Saudis have access to potable water. While the absolute water scarcity level is at 500 cubic meters per capita per year, Saudi Arabia has 89.5 cubic meters per capita per year. Overconsumption and lack of reliable renewable sources are the biggest issues regarding water scarcity in Saudi Arabia. Data on the Kingdom's consumption levels indicates that it is using four times the water that it renews on average. Additionally, 82% of wastewater is not purified for reuse, and groundwater sources are rapidly depleting. Saudi Arabia also relies heavily on desalination for its water, which is an expensive and environmentally unfriendly system. Though Saudis are for the most part not dying due to water scarcity, it is a looming threat, and there will be extreme consequences for the region if the crisis is not addressed and managed soon.

## **UAE**

The United Arab Emirates, despite being extremely developed and well-known for its extravagance, is threatened by the risk of depletion of their available water resources. In 2005, the Emirates Industrial Bank said that the UAE had the highest per capita consumption of water in the world. For the past 30 years, the water table of the region has dropped one meter per year as well. The UAE is projected to deplete its natural freshwater resources in 50 years given these rates. The UAE has lots of desalination plants to reduce water deficiency, but needs to emphasize managing its consumption. The country needs to be wary of the well-known dangers that come along with being dependent on desalination plants as well.

## **India**

India is currently one of the world's most water-stressed countries. India currently accounts for 17% of the world's population, however, they only have 4% of the world's freshwater resources. Consequently, extreme water scarcity has not only impacted the common households, but also impacted India's industries and agricultural communities. It has been predicted that by 2030, around 74% of India's wheat cultivation will suffer from water scarcity. India has irregular raining patterns, with 80% of the rainfall concentrated between the months of June and September. This occasionally leads to flooding in various parts of the country. Worse yet, despite that the large rainfall, India lacks the technology to purify rainwater into freshwater. Instead, most of the dirty rainwater is left to contaminate limited freshwater, exacerbating water shortages in India.

## **Pakistan**

Pakistan has moved from being a water-stressed country to being a water-scarce country. Since 1947, the population of Pakistan has quadrupled, while the overall water supply has decreased. All of Pakistan's people, industries and energy are dependent on a single source of water – the Indus River basin. Due to such overdependence on one source, the amount of water left to be distributed has significantly decreased over the years. Such severe water scarcity has increased worries about future food shortages in Pakistan as well. With the majority of the population dependent on agriculture, water scarcity has largely destabilized food security within the country. Moreover, more than 60% of the country's energy is sourced from the thermal power production sector, which requires a large amount of water for maintenance. Thus, water scarcity in Pakistan is projected to threaten both the food and energy security in the country.

## **Yemen**

Yemen is one of the most water-scarce countries in the world. Continuous conflicts have led to the destruction of water infrastructures, which has exacerbated the problem of water scarcity in the country. Currently, it is estimated that around 18 million people lack access to clean water and sanitation. The existing water network reaches less than 30% of the

population, which has left millions of people living without access to clean drinking water. Such lack of clean water has led to outbreaks of cholera, which killed more than 4000 people in 2016 alone. The cultivation of Qar, a cash crop in Yemen, is currently depleting the limited water resources in the country. The cultivation of Qar takes up more than 40% of Yemen's renewable water resources, driving the country into a more severe water crisis.

### **Uzbekistan**

Uzbekistan is under threat of severe water shortage. Like most other Central Asian countries, Uzbekistan is far from water resources, with only 20% of the water used in the country generated within the country. The remaining 80% is mostly imported from upstream countries such as Kazakhstan and Kyrgyzstan. However, even these two upstream countries are relatively poor, thus, they export most of their water to hydroelectric dams and other reservoirs to generate electricity. This leaves Uzbekistan even more vulnerable to water shortages. It is estimated that the water shortage problem will be around 5 times worse than it is now by 2050.

### **Syria**

In May 2021, the Euphrates River, one of Syria's main sources of water, reached its lowest point, leading to one of the worst droughts in the history of Syria. However, water scarcity is not a newly-seen problem in Syria. Due to the severe water crisis that Syria faces, farmers have already lost around 80% of their agricultural land. Moreover, clean water is being rationed throughout the entire country, leaving many to rely on expensive water truck services or dirty water. Overuse of water in the cultivation of cash crops, illegal well drilling and inefficient irrigation techniques have also worsened the water crisis in Syria.

### **Egypt**

Egypt is one of the countries that have the highest risk of water depletion. It is estimated that by 2050, the entire country may completely run out of water. One of the main reasons for the water crisis in Egypt is severe climate change. With hotter climates, demand for water is going up, while the availability of water continues to decrease. Currently, around 102 million people in Egypt are at risk of drought. This problem has most apparently impacted young children the most, who are less resistant to heat waves and drought.

### **South Korea**

South Korea has the highest water scarcity among OECD countries. Although South Korea currently is not expecting immediate water shortages, there is a risk of having water shortages in the future. South Korea obtains water from its lakes and oceans, most of which is already allocated. Thus, water shortage may become a problem for South Korea if the population increases. Moreover, due to the impact of climate change and urbanization, South Korea's water security has been slightly threatened. There are not enough public funds that

are available to be used in securing the water supply due to the increase in aging population who have no significant economic input.

### **Iraq**

Although Iraq was once abundant in water, it is currently facing severe water scarcity. Water levels in the Tigris and Euphrates rivers are constantly decreasing, mostly due to the dam upstream in Turkey. It has been predicted that by 2040, Iraq would become a country without rivers. Nearly 3 out of 5 Iraqis children have no access to clean water. Impact of climate change has worsened the water crisis in Iraq by increasing the water demand in times of water scarcity. Moreover, Iraq currently lacks technology for efficient water management. Much of water high in salinity from the Arabian Gulf are contaminating the few aquifers in Iraq, further depleting the already-scarce water resource.

### **China**

China currently is facing severe water scarcity, largely due to their skewed distribution. China's energy is mostly dependent on hydroelectric dams, which consumes most of the country's water. Thus, most households are heavily reliant on groundwater, 90% of which is not safe to drink. Furthermore, Northern China, where most agriculture is based, receives only 4% of the country's water supply. Therefore, agriculture in China also is heavily dependent on groundwater, accelerating its depletion.

### **United States of America**

Out of the 50 states in the United States of America, around 40 of them are expected to face water shortages in the near future. Currently, around 100 out of 204 basins are in trouble, indicating that the American water supply is quickly being depleted. Moreover, each American uses around 80 to 100 gallons of water every day, and at a national level, Americans use around 345 billion gallons of water per day. This is enough water used in one day to sink the entire Rhode Island. Most of the American households and farmers rely on groundwater from aquifers, most of which is being drained faster than it can naturally be replenished. Thus, America is rapidly depleting its water supply, increasing their risk of facing water shortages in the future.

### **South Africa**

Africa's water scarcity is worsened by its limited precipitation. Africa's annual precipitation averages at around 497 mm/year, which is around 50% lower than the global average. Consequently, water is unevenly distributed, forcing millions of South Africans to obtain water from reservoirs around 400 km away from their homes. Concurrently, around 19% of the rural population lack reliable water supply, while 33% do not have access to basic sanitation. Worse yet, 26% of all schools and 45% of all clinics don't have access to water at all.

This is largely due to South African energy companies, which use around 10,000 liters of water per second. Thus, most of Africa is suffering from severe drought and water shortage.

### **Turkey**

Turkey is in critical danger of losing all of their country due to the lack of rainfall. Continuation of drought has left the biggest city of Turkey, Istanbul, in danger of losing all of its water within a few months. This has even led to crop failures and food shortages within the country. Moreover, it is predicted that around 60% of Turkey's land is likely to undergo desertification in the near future. The lack of rainfall also accounts for the drop in water levels in various dams of the country.

### **Italy**

The Italian government declared an emergency on five of the country's regions due to severe drought on July 4th, 2022. One of the most famous rivers of Italy, the Tiber River, is currently running at an extremely low level, demonstrating the severity of the drought in the country. The main causes of such a severe drought is due to rising temperatures and deficient rainfall. Italy has had extremely low levels of rainfall for the past few years, which have accumulated to exacerbate the water crisis in Italy. Furthermore, Italy's water maintenance system is poor, causing the country to constantly lose around 30% of its water. The drought has already wiped out around 30% of the total harvest, however, improvement is yet to be made.

### **Sudan**

In Sudan, around 17.3 million people lack access to clean drinking water, while 24 million people lack access to sanitation facilities. Statistics also show that more than half of the schools in Sudan either don't have access to water, or have dysfunctional facilities. Only 10% of the schools have working facilities that allow their students to wash their hands. Sudan is largely dependent on the Nile River basin for their water, which is shared by neighboring countries such as Egypt and Ethiopia. However, Sudan's use of the Nile River basin is not regulated by its government, giving rise to conflicts with the neighboring countries.

### **Nepal**

Nepal is known to be one of the poorest countries in the world, and their poor water facilities reflect such extreme poverty. It is reported that around 80% of the population only has access to dirty drinking water, while those living in rural areas have no access to water at all. The majority of the Nepalese rely on groundwater and surface water, both of which are contaminated by unfiltered sewage and industrial waste. Such an extreme deficit of clean drinking water kills around 44,000 children annually.

## **Argentina**

Argentina is home to one of the world's largest water basins: Río de la Plata River Basin. Moreover, Argentina also owns one of the largest aquifers in the world: Guaraní aquifer. Thus, Argentina has an abundance of water supply, however, much of it is unequally distributed. For example, the most populous and industrialized regions of Argentina lie on the western side of the country. However, other regions such as San Juan or La Rioja lack access to water, and thus are very arid.

## **Nigeria**

In Nigeria, around 26.5 million children experience water vulnerability, indicating that they are prone to problems caused by water scarcity. It is estimated that more than 80% of Nigerians do not have access to clean drinking water. Although more than 70% of the population has access to some kind of water system, most of it is contaminated and thus is not considered to be safe. Furthermore, only around 9 liters of water is available to a Nigerian per day, which is far less than what is actually needed.

## **Ethiopia**

In Ethiopia, more than 62 million people are impacted by a severe water crisis. As a matter of fact, 7.5% of the global water crisis is occurring in Ethiopia alone, indicating that water scarcity is a pressing issue in the country. Along with the scarcity of water, Ethiopia has barely any sanitation system. Around 22% of the country's population is currently without a toilet, forcing them to use fields or forests as bathrooms, which leads to severe contamination of available groundwater. Such lack of sanitation can also be noted by the fact that around half of the population do not have access to hand washing facilities. Unfortunately, little has been done to improve such a situation in Ethiopia. Thus, water scarcity continues to be a threatening problem for Ethiopians.

## **Uganda**

In the past decades, Uganda has experienced large economic growth, which has converted many rural areas into more developed, urban cities. However, such rapid growth of the economy has left Uganda to face the struggle of increased demand for water. With limited water and sanitation facilities, more than 7 million Ugandans currently lack access to safe water, while around 28 million do not have access to sanitation facilities. Worse yet, the large economic disparity between those in the urban and rural areas has created an uneven distribution of the water supply. The poorest people are forced to spend more than 20% of their income just on maintaining their supply of water, which has ended up reinforcing the endless cycle of poverty.



## Possible Solutions

The global water crisis emphasizes that clean water is not accessible in all parts of the world. Thus, it is crucial for the Economic and Social Council of the United Nations to develop solutions to mitigate the severe lack of water in certain parts of the world. One possible solution is the installation of rainwater harvesting systems. As some areas are isolated from water reservoirs to supply their water, it is crucial that there is some alternative option developed. The development of rainwater harvesting systems allows isolated areas to collect and store water in times of need. One method of rainwater harvesting, roof water collection, allows for rainwater to be collected on the roof of buildings and then stored in a tank or distributed to an artificial recharge system. If such a system is implemented correctly, it can even increase the groundwater level, further reducing water scarcity in various parts of the world.

However, this cannot be a permanent solution. Such a rainwater harvesting system is heavily dependent on unpredictable climatic conditions and fails to be a consistently reliable source of water. Worse yet, the fact that some areas are isolated from water reservoirs is a problem that cannot be solved, as it is impossible to geographically move the locations of regions. Keeping in mind these limitations, there has to be an urgent change in the global usage of water. Currently, our agriculture system uses up more than 70% of the freshwater available. A lot of this water is wasted due to the lack of a sufficient irrigation system, resulting in a constant decrease in the freshwater supply. Therefore, a more efficient irrigation system that minimizes wasted water has to be developed.

In addition to minimizing wasted water, a water purification system has to be developed in all parts of the world. In areas such as Ecuador, the major problem with water is not the fact that water is not available. Although there is water available, there is no purification system available to convert groundwater into edible water. Therefore, many simply choose to drink dirty water, leading to various health complications. To alleviate this problem, installing some kind of water purification system is crucial. However, from a realistic point of view, installing an entire purification system to support an entire population is not easy, nor affordable for many countries. Although installing a permanent water purification system may be a helpful long-term solution that has to be considered, it is not an efficient solution to bring immediate changes. The Economic and Social Council of the United Nations has to find affordable and easy solutions that countries can implement to make sure there can be immediate changes made to unstable water situations in many countries. For example, currently, many crisis-aid organizations are supplying water purification tablets such as Aqua pods to countries that do not have access to any fresh water. Such water tablets cost around \$10 for 30 tablets, which is enough to purify 60 quarts (around 56L) of water. Similar methods of cheap and immediate water purification systems have to be implemented to improve the global water crisis.

## Questions to Consider

- What are the consequences of re-distributing water?
- What are the consequences of lowering the price of water purification systems?
- What are the limitations of water purification systems and rainwater harvesting systems?
- What modifications have to be made in order to improve the possible solutions?

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