

Water Scarcity: A Global Threat

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Abstract

Water is an unavoidable need of life and water scarcity means a lack of fresh and drinkable water. Water scarcity is turning out to be a global threat as almost all the important and populous regions of the world like Asia, Africa, the Middle East, etc. are facing the issues of water scarcity and water-based conflicts. There have been more than 35 violent inter-state water disputes in the last 50 years. The major causes of water scarcity are an increase in demand, water overuse, climate change, and a decrease in supply. The problem of scarcity of water is increasing day by day which depicts that if this possible water crisis is not solved peacefully and appropriately it will lead to global conflicts because every water-scarce country would try to capture the water resources of other countries for meeting its own needs and survival. This paper highlights the importance of water and focuses on how the careless attitude and mismanagement of water resources can result in a global disaster.

Keywords: Water, Mismanagement, Water scarcity, Causes, Global issue, Future.

Introduction

Water is the foundation of life on earth. As far as the surface of the earth is concerned there is almost 70 percent water on it. The further division of earth's water is so weird as oceans contain 97% of the surface water of the earth which is too salty for drinking, cooking, and industrial usage. The remaining 3 percent of the earth's water is unsalted and generally termed fresh water. Unluckily more than 2.5% of this 3% fresh water is not easily usable because it is distributed in ice caps and glaciers. Some share of this 2.5% is either much polluted or far down the surface which makes its extraction more difficult. Only about 0.3% of the total water on the surface of the

earth is considerably fresh which is drinkable and usable. Habitants of this earth use water for different purposes like drinking, washing, and cooking as well as for agricultural needs. Energy and food are amongst the top concerns of the world. Energy can be generated by alternative means other than water but food and crops cannot be produced without the availability of enough water. Water scarcity is commonly defined as the lack of the resources of fresh water to meet the demands. The scarcity of water can be considered one of the biggest problems in the modern world. As the population of the world is increasing rapidly, water usage across the globe has been increasing very quickly even at the rate of more than 200% as compared to the last century. For the minimum period of one month every year, more than 65% population of the world experiences severe water stress. About 1.2 billion people according to the reports Food and Agricultural Organization (FAO) of the United Nations are the residents of water-scarce areas. Water scarcity can be further divided into two types, physical and economic. The type of water scarcity is to be called physical when the demand of any region surpasses the water resources available there. Economy water scarcity means water infrastructure is not so good and water resources are being managed improperly. When we talk about places with economic water scarcity, it is meant that there is enough quantity of water to fulfill the needs but access is restricted. As water resources are diminishing the real challenge is ensuring the justifiable and impartial distribution of water. In geopolitically unstable and infirm regions, a shortage of water can result in regional clashes and compelled migration. In 2017, about 68.5 million people in the world moved from one place to another because of water scarcity. Most countries face the problem of water scarcity as it already affects every region in the world. The reports of the United Nations show that water scarcity is already affecting almost the half population of the world and this graph is expected to rise. United Nations Water has predicted that by 2025, about 1800 million individuals would be residing in countries suffering from complete water scarcity. Two-thirds of the planet's population might be under poor water stipulations in the future as today, there are already 2.7 billion human beings in more than 45 nations that stay except a protected and smooth grant of water. Every state is trying to meet its water demands on a priority basis because a direct line can be drawn between a nation's economic power and the extent to which it fulfills the fundamental desires of its people. There are several examples of water conflicts between different states in history because no state can compromise on the need for water as it is a necessity for the existence of life. Sometimes states play unfairly to fulfill their demands by stopping or diverting the flow of water to lower riparian states. In addition, some states are similarly pressured to utilize a heavy dependency on river water controlled by way of upper riparian countries. Changes in the availability of water and variability can instigate migration and agitate different conflicts. It is estimated that in the coming years, water scarcity will expand to regions where it does not exist now and extensively irritate areas, already facing water shortcomings. Water scarcity will be a disturbing factor in some international locations due to the fact they do not have plenty of economic assets and technical skills to tackle this problem. Observers do agree that water would be one of the foremost reasons for future contentions and if rapid and desirable agreements are not mounted on how to share reservoirs, rivers, and underground water aquifers, more than 50 countries of the 5 continents may quickly be involved in water strife.

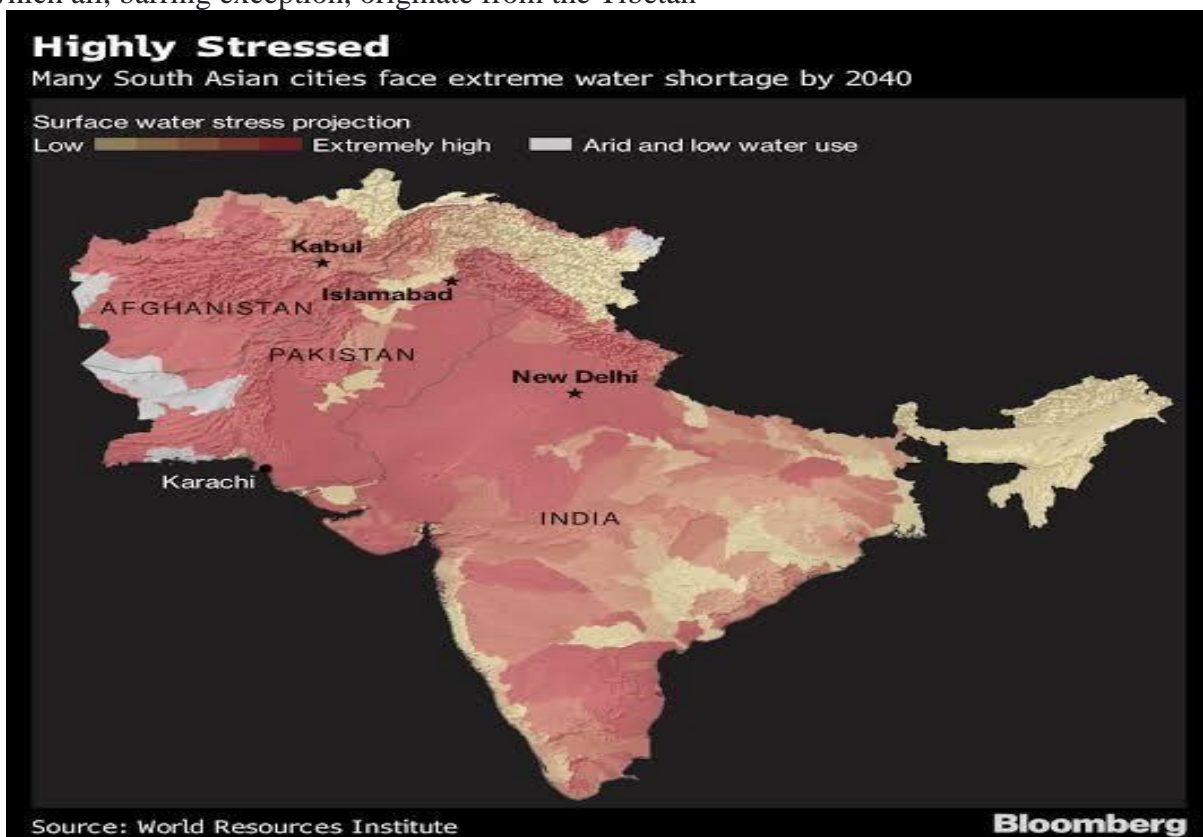
Causes of Water Scarcity:

There are both natural and human causes of water scarcity within the world. A few of them are listed below.

- Lack of rains
- Global warming (melting of glaciers and icecaps thanks to high temperature)
- Ever-increasing population (addition of 1 billion people after every 12 years)
- Overuse of groundwater
- Pollution of water (main explanation for water diseases)
- Mismanagement of water resources
- Excessive use of water for agricultural purposes
- Inadequate storage facilities
- Deforestation and erosion

South Asia and Water Scarcity:

South Asia is the most densely populated region of the planet because it is the living place of more than 24% population of the world. About half the uneducated individuals in the world and 40% of the poorest people sleep in South Asia. China, India, Pakistan, and Bangladesh are the more important countries in the region in terms of water conflicts. China is an emerging major power with great resources, a strong economy, and therefore the highest figures population. Bangladesh is a country in South Asia that has great resources of water but faces water problems for being on the lower side as compared to India. Both Pakistan and India are nuclear powers and agricultural countries. there's a history of rivalry between both nuclear neighbors. Agriculture is especially hooked into irrigation systems supported by a number of the largest river structures on the earth which all, barring exception, originate from the Tibetan

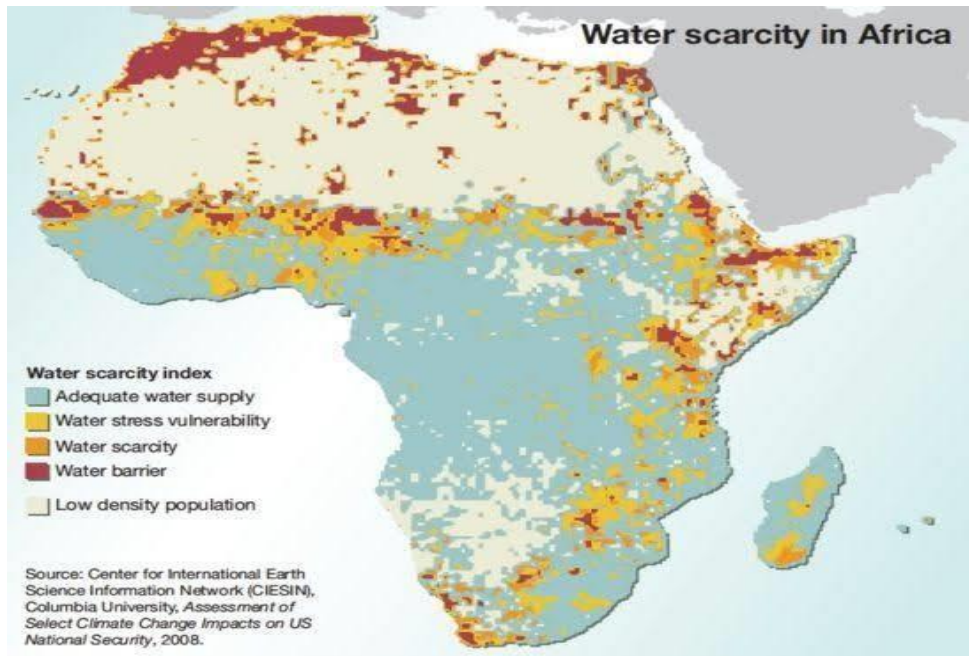


Plateau is the very understood reason for China's hold over the water supply of South Asia. The shocking fact is that India is the common party altogether in water disputes within the region. In

1996, Ganges Treaty was signed between India and Bangladesh as a settlement to share floor waters at the Farakka Barrage close to their mutual borders. A treaty between Pakistan and India named as Indus Water Treaty was signed in the year 1960 following the water issues between the two neighbors. The Indus Water Treaty is an agreement that was made to sketch the control over the 6 rivers that meet India and then Pakistan into the Indus basin. India is placed at 2nd position in the list of countries with the most population in the world and being the upper riparian state just in the case of Pakistan, India has the leverage to carry the flow of water for about 30 days which may cause severe water shortage in Pakistan. Keeping in sight the longer-term energy and food needs of India, it is often expected that India could violate the projects of Indus Water to satisfy its national demands. According to a present-day record by the International fund (IMF), Pakistan ranks third in the world amongst international locations going through acute water shortage and consequently, the Pakistan Council of Research in Water Resources (PCRWR) moreover warns the authorities that this South Asian state will acquire absolute water scarcity through the way of 2025. UNO has located Pakistan as the seventh number among the foremost water-stressed countries. Pakistan cannot afford any shortening in the ongoing water inflow now and if India is found disobeying the Indus Water Treaty, it will acerbate the differences between Pakistan and India and may even cause nuclear war together the US diplomat predicted. South-North Water Transfer Project is being built by the government of China with an estimated cost of \$62 billion. About 44.8 billion cubic meters of water per annum from southern China to northern China would be diverted as a result of this project. There will be some very serious penalties for India after the project of Great South-North Water Transfer as it will drastically impact water influx in Brahmaputra inflicting a huge decrease in irrigation water in Assam and Arunachal Pradesh throughout the dried summer season and it can even add fuel to the ongoing border disputes between these two giants of South Asia.

Water Scarcity in Africa:

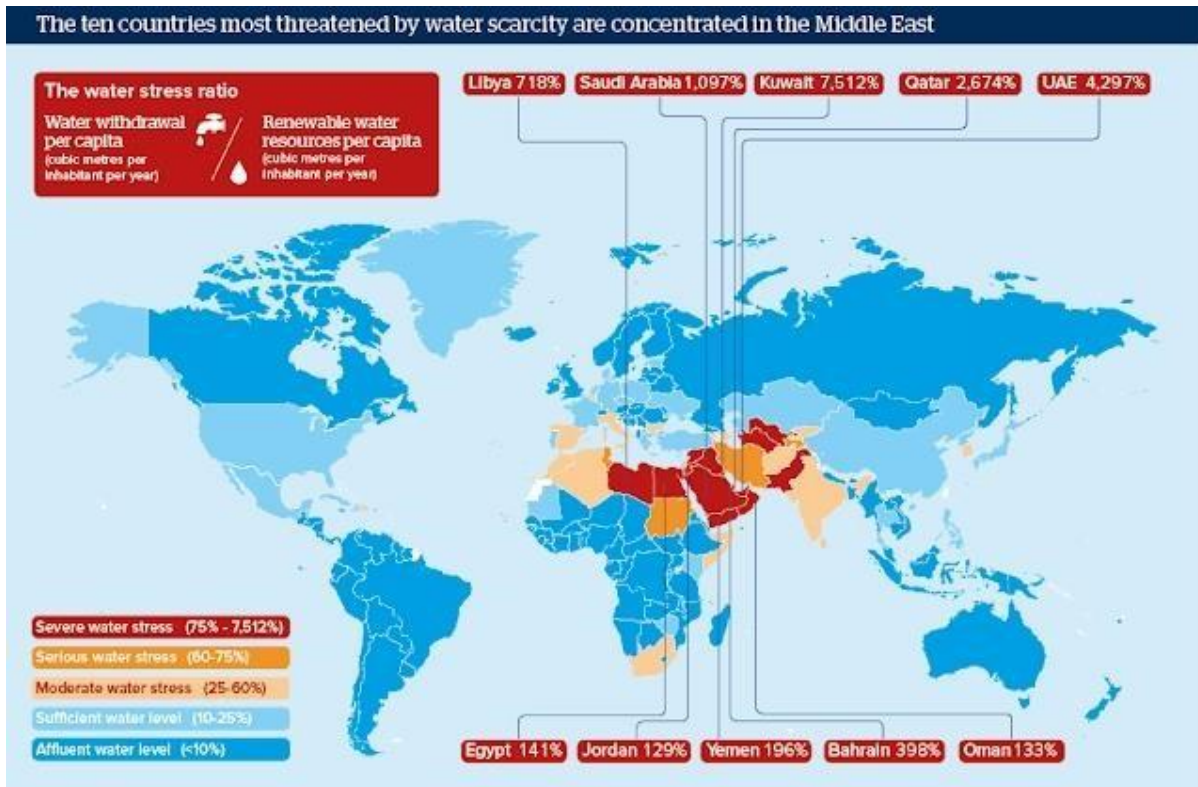
The 2nd most populous continent of the planet after Asia is Africa as it is the home to about 16% population of the world. The words that come to our mind once we listen to the name of the African continent are poverty, hunger, and slavery because the history of this region is extremely pathetic. Aside from this, water scarcity is another major problem in this region. It is feared that seventy-five million to 250 million humans in Africa are going to be living in areas of excessive water



scarcity with the aid of 2030. which can move anywhere between 24 million and seven hundred million individuals as the situation seems to be worse and even more unliveable in the future. Most African countries face water crises of severe nature. In Sub-Saharan Africa, 783 million human beings are living and about 40% of people among them do not have are without access to clean water even not for drinking. Water stress takes place when water assets at some point in a vicinity are inadequate for the needs of any particular region. Global climate change and different weather and environmental conditions can also be the reasons for water scarcity. 14 countries in the African region are going through water crises right now. It must be kept in mind that Africa has adequate water assets but its actual botheration is a lack of unpolluted beverages. In 2018, Cape Town almost ran out of water. According to the published figures of the United Nations, Sub-Saharan Africa single-handedly loses 40 billion hours for each annum collecting water which is almost equal to the total labor work of the whole of France.

Region of Middle East:

The Middle East has a very long history of differences that involve religious, sectarian, military, and water conflicts. Water is increasingly becoming an additional source of tension in an already unstable region which has deteriorated the lifestyle of the people living in the region of the Middle East. The key factors behind the emerging desire for water are the quick multiplication of the population and the insufficiency of food among individuals. About 6.3% of peoples on the planet use to live in the Middle East but it carries just 1.4% of available clean water



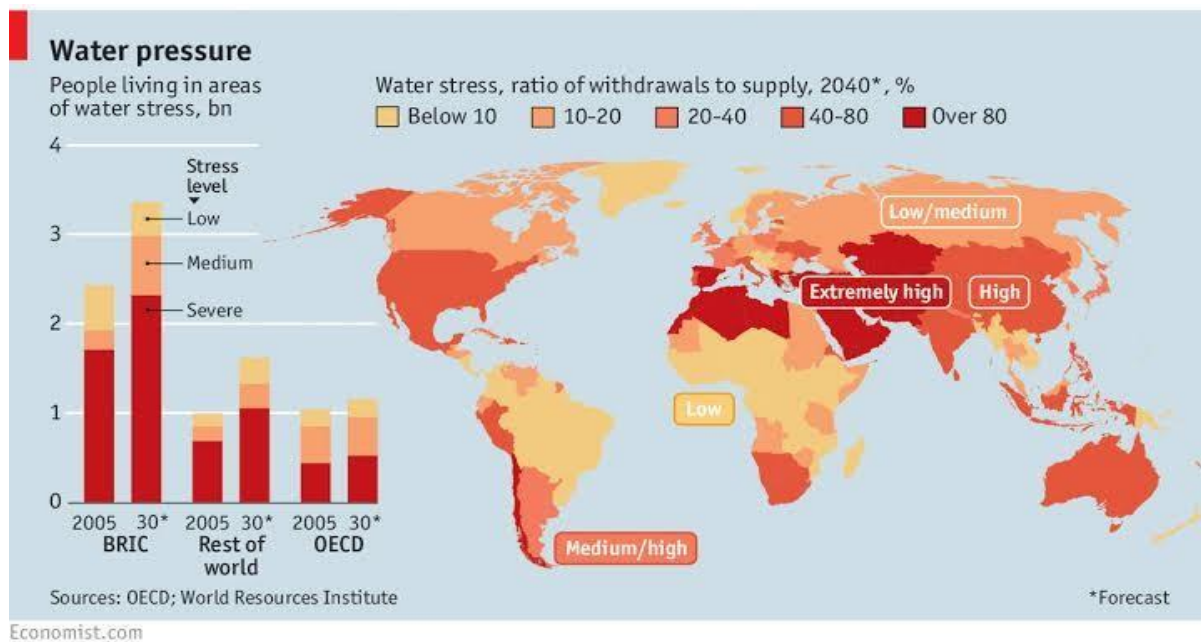
of the world. The very basic reason for water disputes is that water resources are shared by multiple countries share the resources of water in the region. 60% of the Middle East’s surface water originates from outside the region and the lack of management and planning in the fair distribution of these resources is likely to remain a source of political tensions. There are two notable water disputes in the region. One is over the Jordan basin where the main disputing parties are Israel and Palestine. The history of this conflict can be traced back to the “Six-days war”. It was fought between Israel and bordering states of Arab in 1967. At the end of the war, Israel captured the Egyptian Sinai Peninsula, the Gaza strip, the Golan Heights of Syria, East Jerusalem’s West Bank, and the Arab sector which both were under Jordanian rule till then. Since 1967, Israel has taken complete charge of the water resources of Palestine. Israel utterly restricts the people of Palestine from having access to the Jordan River. According to Oslo II interim accord signed in 1995, 71% of the water share was granted to Israel but today Israel is using almost 90% of water resources and making it the matter of life and death for the Palestinian population. The other water dispute in the Middle East is over Tigris and Euphrates rivers mainly between Turkey, Iraq, and Syria. Both rivers originate in Turkey while Iraq heavily depends on this river for its water needs and Syria almost totally depends on the Euphrates. Turkey is going to build 22 dams on the Tigris and Euphrates rivers in South Anatolia under the umbrella of the Greater Anatolia Project (GAP) which has proliferated tensions. Following the estimations, with the completion of GAP, the utilization of water by Turkey would increase from nearly 10 percent to more than 50% and it will surely diminish the flow of Euphrates and Tigris to the remaining two countries. Moreover, a 20% reduction in rain is anticipated for the future due to climate change and a then higher degree of evaporation would also contribute to causing more water scarcity. According to the prediction, 14 countries in the Middle East will suffer severe water shortages in 2040.

Other Regions of the World:

No region of the world can be declared safe from water crises keeping in view the present statistics and situation shortly. Water shortage has been an issue in every region between different countries. In North America, water disputes mainly between the United States and Mexico about the quality of water over the Colorado and Rio Grande rivers have a very long history. It is estimated by analysts that although the US not facing much water shortage right now till 2070 it will face water scarcity keep in mind climate change and increasing population. The water situation in Australia is also very alarming but Australia is no longer the first country to face the possibility of a Day Zero as Sao Paulo, a city in Brazil was on the edge in 2015. It was a threatening and lamentable experience as Brazil, the country having about 12% resources of usable water on earth was unable to ensure enough supply of water to its citizens. It must be kept in mind that the scarcity type in the countries like Australia and Brazil is economic rather than physical because they have enough water but management is very poor with bad infrastructure. In mid-2018. In Europe, the deficiency of water influences almost 11% of the European public and different areas making up 17% of the total territory of Europe. Spain is one of Europe's driest countries and along with Greece, it could become water scarce up to 80% in 2040. New Zealand has an abundant supply of water but even it faces seasonal water shortages due to unequal distribution.

Conclusion:

Water is the 2nd fundamental requirement for life on Earth after oxygen but unluckily the threat of water scarcity is present across the globe because water shortages are being experienced and predicted in every region of the world. The issue of water scarcity is one of the most crucial threats that the world is experiencing on social, economic, political, and environmental levels.



International institutions should play their role in sorting out the water issues and to make sure the fair and equal use of water between disputing countries. Governments and authorities must take necessary steps to overcome water scarcity and make sure the availability of clean water for drinking purposes as the World Water Forum estimates that 7 million people die yearly from diseases linked with water. Across the globe, about 80% of diseases are caused due to bad

conditions of sanitation and unclean water. Water is directly linked with the economy because a huge share of water is used for agricultural and industrial needs which are termed key determinants of the economy. Globally, 69% of water is used in agriculture, 23% of water in industry, and 8% of water for domestic needs. Improving water infrastructure and smart irrigation systems must be the priorities to avoid water scarcity and wastage. Life existence can not be expected without enough supply of usable water as we see that some states are facing high-level water scarcity and there is also instability in some regions of the world due to water crises. The need of our is to manage the issue of water intellectually and peacefully so that any violent escalation may be avoided in the future because it is very much clear that people would prefer to go to war to capture the water resources of others instead of dying of thirst and scarcity. More efforts should be done to meet the needs of water. The supply of water should be arranged for everyone with no exceptions at all. One can easily understand that water is a global need and scarcity of global need is a global threat as a United Nations report warns water scarcity could affect 5 billion people by 2050. Collective efforts should be made to fulfill this gap between water availability and water demands. Undoubtedly, water is going to be the very main reason for conflicts soon as analysts, environmentalists, and strategists have warned that there could be wars on the water in the coming years because in the case of water scarcity, the top priority of every country would be the acquisition of more and more water resources and it will cause great disturbance in the world. As time is passing on and the authorities are not paying due attention to this issue of water scarcity despite the alarming situation and facts, it can be foreseen that the results of this negligence would be disastrous because studies suggest that by 2050 more than two-thirds of population of the world would be suffering from water scarcity.

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