

Effects of Global Water Crisis on Businesses and the World Economy

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Global Water Scarcity and Economic Risk

The global water scarcity due to the rising demand for water and the change in climate is increasingly affecting world businesses and the economy. Virtually all businesses have to consider the use of natural resources. The world is facing a possible 40% of water that is available for use by humans by the year 2030, according to a study conducted by the United Nations (Gosling and Arnell, 2016). This has raised concerns in the global and economic world as companies and businesses cannot get a sustainable supply of clean water. This will reduce the expansion of operations by companies in the world, as water is a basic element in virtually all operations of any company. This paper will discuss the impacts climate change and the global water crisis are having on businesses and the world economy.

The world GDP is predicted to fall by 6% by the middle of this century by the World Bank as a result of the increased competition for water. This is because companies and businesses are spending an average of \$1.2 billion to at least have a constant water supply to help run their operations. Every year, flooding, droughts, and tightened environmental regulations cost companies and businesses close to \$14 billion, which is a factor that is not favorable to the business and the economy (Gosling and Arnell, 2016). All these challenges are attributed to climate change that has been brought about by the industrial revolution.

Climate Change and Pressure on Water Resources

There is strong evidence of how the use of fossil fuels has impacted the Earth's atmosphere. The concentration of carbon dioxide in the atmosphere is continually increasing. This increase in the concentration of carbon dioxide and other greenhouse gases in the atmosphere is changing the planet's climate. Global temperatures have increased, and these changes are expected to accelerate in the coming years. In the most recent study, the intergovernmental panel on climate change concluded that water and its availability will be the main pressures on societies and the world economy. More evidence is being documented all over the world as there are increased severe weather events like flooding, drought, and diminished ice covers, all of which are attributed to climatic changes. Scientific studies have also shown that droughts have increased duration, intensity, and spatial extent, as well as increased atmospheric temperatures, changes in rain patterns, and diminishing snowpacks. This is affecting the quality and supply of fresh water in the world. The figure

below shows how the levels of carbon dioxide have increased in the atmosphere since the Industrial Revolution.

These climatic changes will affect water and sustainability by increasing water shortages due to the changes in precipitation patterns and intensity. The subtropics and the mid-latitudes are expected to experience dry conditions, thus affecting the businesses and companies based in those areas. The natural water storage mechanism will also be affected. The glaciers and snow parks are melting due to the increased temperatures, thus affecting the long-term availability of water for the world's population. The populations living in the snow-fed areas will face an extreme shortage of clean water.

In addition to that, there will be an increased vulnerability to ecosystems due to temperature changes that have brought changes in precipitation patterns, extreme weather events, and prolonged droughts. These changes will, in turn, reduce the natural water filtering process, thus reducing the amount of water available for human beings. The water supply infrastructure set by companies will be affected by floods, rise in sea levels, and droughts. Most companies are not built to withstand such extreme conditions. This ranges from water treatment companies that do not have the infrastructure to capture large amounts of water to help meet the high demand for water during dry periods.

Water Quality, Health, and Industrial Consequences

Other than the scarcity of water, climate change will impact the water quality. The increased erosion rates will wash the chemicals used as fertilizers to the water bodies. This affects the quality of water and makes it unhealthy for consumption. The coastal waters and surfaces are also affected by the rise of sea levels, which results in saltwater intrusion into rivers and aquifers that are responsible for holding fresh water used for consumption.

The increased temperatures lead to an increase in the growth of algae and other bacteria that further contaminate the water to a level that the current infrastructure is not equipped to treat. This will lead to increased health issues that will require governments and businesses to pay more for the treatment of employees. Governments will also be required to spend more on health as its population will be exposed to a whole lot of infections related to water. On top of that, there will be an increased demand for clean water because of the prolonged droughts that will require that most farming industries and businesses require water for irrigation. Human beings and agricultural animals will require more water for hydration because of the increased temperatures. Industrial factories will also require more water for cooling because of the increased atmospheric and water temperatures. This means that businesses in basically all sectors of the economy are affected as they depend on clean water to run their operations.

Other than that, the world economy will be forced to shift to either nuclear power or fossil fuel to produce electricity, as the hydroelectric power plants will not be able to meet the demand. This is

because there will not be enough water throughout the year. The use of fossil fuel will speed up the rate at which carbon dioxide concentration in the atmosphere increases, and nuclear power will require water to cool (Wada and Bierkens, 2014). The impact of water shortages will vary depending on the region. Some areas will have more water while others will have an extreme crisis of water. However, overall, the effects of the water crisis affect more than those areas that will benefit. This phenomenon is shown in the figure below.

Flooding, Displacement, and Global Economic Instability

Additionally, the people and businesses located at low altitude levels will experience severe flooding that will destroy their properties and even lead to displacement of people from the areas. This can lead to a world refugee crisis as the circumstances are able to create environmental refugees on a massive scale. This, in turn, will affect the economic sector as governments will be spending so much to protect the people and resettling them in areas that are saved. WHO and UNICEF estimates for 2024 indicate that 2.1 billion people lack safely managed drinking-water services and 3.4 billion lack safely managed sanitation services. Therefore, the situation will worsen in the future since the government will concentrate on feeding its population and not building the economy. Businesses will also close down either because they have been displaced by the rising sea levels or because of the lack of fresh water to run their operations.

Another important aspect of water is the direct relationship that exists between water and energy. Most people think of hydropower when they hear water and energy. However, other than the generation of electric power, water is used to extract and refine other sources of energy, such as coal. Other forms of energy production also use water, for instance, the solar energy uses water to transform solar energy into heat energy. The vast amounts of energy used to treat and distribute water also show a close relationship between energy and water. Therefore, energy production will be affected drastically as the business and company decision-makers will concentrate on how to safeguard the water rather than how to increase energy production. A reduction in energy production means that many businesses will shut down since they will not be able to have enough energy to run their operations (Tas, 2013). Decision-making for many firms is affected slowly as most firms concentrate more on ensuring a sustainable source of clean water than achieving their goals. Governments are also spending a lot of money trying to restore the natural ecosystem; thus, most of the world's economies are stagnant, and this will affect businesses adversely (Alcamo, Henrichs, and Rösch, 2017).

Conclusively, from the discussion above, it is evident that water is directly linked to business and the economy. For instance, water is used in almost all operations run by businesses. This ranges from production, consumption by the employees, and even the raw materials needed by businesses to water. On top of that, the energy needed in production mostly needs water for production,

transformation, and cooling of the machines. This means that without water, there will be no energy and no business. The decision-making process is also dependent on water as most companies are turning to concentrate on how to get clean water for their processes. Therefore, businesses should learn to measure water and carbon footprints through the value chain, thus being able to develop a management strategy to safeguard water and limit pollution. Secondly, they should integrate water and climate issues into their business strategies and operational activities. This will help safeguard the water quality and also plan for the changes in the water supply. And finally, businesses should come up with an environmental risk assessment to help in long-term planning and implementation activities. This will ensure that the business is not caught off-guard by the water shortages that it had not planned for.

References

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