

Q-MUN 2021 -  
The Queen's  
School Chester



**Global water and food  
distribution in the face  
of a changing climate**

# The issue of Global Water and Food Distribution in the face of a Changing Climate

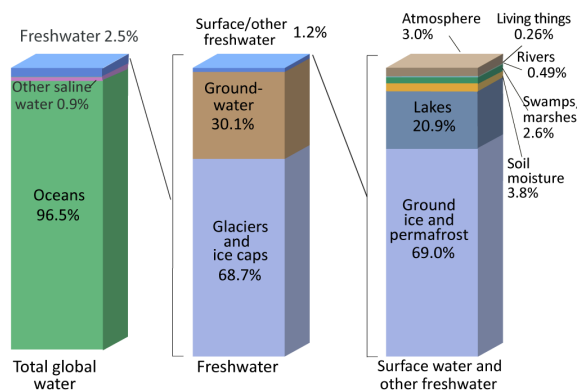
Climate change is defined by the National Geographic Society as "a long-term shift in global or regional climate patterns". Climate change often refers specifically to the global rise in temperatures from the mid-20th century to the present day. Climate change is altering seasonal weather patterns, causing an increase in extreme weather events such as drought, hurricanes and also contributing to rising sea levels.

## Global Water Distribution:

Global water supplies are not evenly distributed across the world with some places having a water surplus and others a water deficit. Only 1% of water on earth is counted as fresh water with over 97% of water being saline and undrinkable unless it is treated.

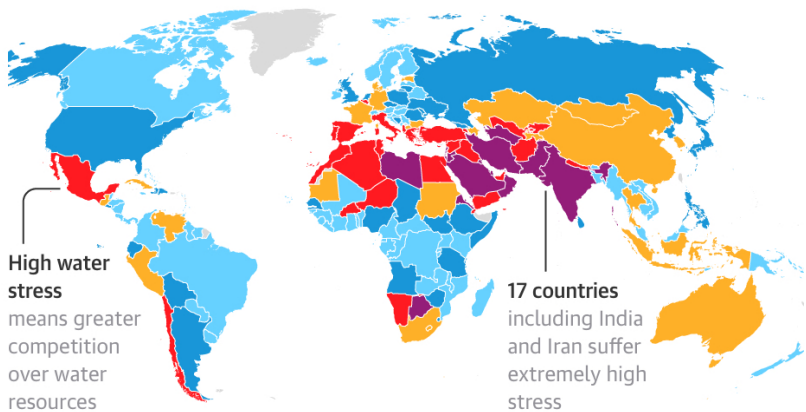
However fresh water is becoming scarcer. Over 2 billion people already live in areas subject to water stress however this is often seasonal. In the future reports have shown that the world will face a global water deficit of 40% by 2030. This situation is worsening due to global challenges such as global warming and most recently COVID-19. Climate change is likely to increase seasonal variability creating a more erratic and uncertain water supply. Several of the world's main aquifers are already under increasing stress and over 30% of the largest groundwater systems are being depleted.

Where is Earth's Water?



Source: Igor Shiklomanov's chapter "World fresh water resources" in Peter H. Gleick (editor), 1993, Water in Crisis: A Guide to the World's Fresh Water Resources. (Numbers are rounded).

Extremely high High High - medium Medium - low Low



Guardian graphic. Source: World Resources Institute aqueduct water risk atlas

Furthermore global fresh water use has increased by a factor of six over the past 100 years. Most of this (69%) is used for agriculture such as irrigation. However in some developing countries 95% of freshwater is used for agriculture.

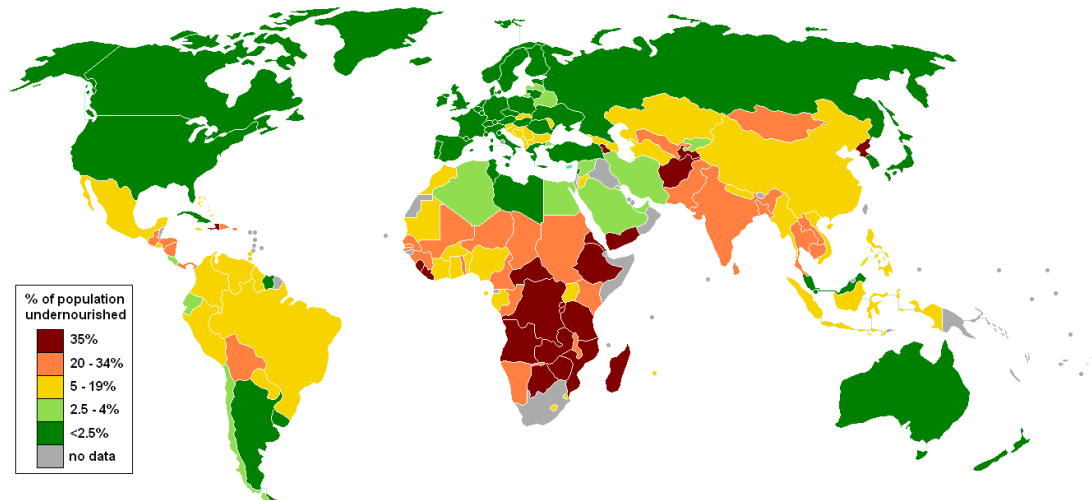
In 2019 Qatar, Israel and Lebanon were ranked in a report as the most water stressed countries in the world. Also 12/17 of the countries with the highest water stress were in the Middle East and North Africa.

Climate change will disrupt the water cycle and precipitation and will lead to more intense drought and precipitation events. This will have a severe effect with countries that already have a high water stress. In addition rising sea levels due to climate change will cause fresh water that is stored close to the coast to become saline which will compromise the water resources millions of people rely on.

## Global Food Distribution:

Global hunger and food insecurity are frequently oversimplified as being primarily a problem of scarcities or distribution of food. However it is a more complex issue comprised of multiple different factors.

War, economic failure, political problems, and weather conditions all play a role in determining the efficiency of any food system. Two recent examples of war and economic failure impacting food distribution includes the decline of food distribution in Japan during World War II and food recession in Sub-Saharan Africa during the late 1970s and early 1980s. In both cases, food distribution was hindered and the population in these areas consequently suffered.



A report published in mid-2020 estimated that almost 690 million people went hungry in 2019 up by 10 million from 2018. The hungry were shown to be most numerous in Asia, but standing fastest in Africa. In addition, many countries are facing the double burden of hunger and undernutrition alongside overweight and obesity due to poor diets.

As a consequence of climate change, some regions are becoming less and less suitable for agriculture. This leads to hunger on a local level and it can have serious effects on global prices. Concerns are also raised about the fast-growing world population and the increasing demand for food. It will become increasingly difficult to feed all the world's mouths, with the population of the earth expected to grow to 9 billion before 2050. Climate change can also alter the distribution and severity of pests and diseases in crops and livestock and has the potential for severe impacts on food production and animal welfare. Around a third of the food produced in the world for human consumption every year gets lost or wasted, whether early in the supply chain through pests and diseases and post-harvest losses, or late in the supply chain at retail and consumption. This impacts on how much we might need to produce in the future.

A report published in one of the highest-ranking public health journals, concluded that climate change has had a detrimental impact on health and food production for the past 50 years and far more needs to be done to overcome its adverse effects.

"The combination of climate change and the quality of nutrition is the major public health challenge of this decade and, indeed, this century. Despite positive advances in world nutrition rates, we are still facing the ongoing threat of climate change to our global food supply, with Sub-Saharan Africa and part of Asia most at risk" Professor Binns a researcher said.

"For the time being, it will be possible to produce enough food to maintain adequate intakes, using improved farming practices and technology and more equity in distribution, but we estimate that by 2050 world food production will need to increase by 50 per cent to overcome present shortages and meet the needs of the growing population.

"Our review recommends that by following necessary dietary guidelines and choosing foods that have low environmental impacts, such as fish, whole grain cereals, fruits, vegetables, legumes, nuts, berries, and olive oil, would improve health, help reduce greenhouse gases and meet the United Nations Sustainable Development Goals, which in turn would improve food production levels in the future."

### **Useful websites:**

<https://www.unwater.org/publications/un-world-water-development-report-2021/>

<https://www.iucn.org/resources/issues-briefs/water-and-climate-change>

<https://www.fao.org/publications/sofi/2020/en/>

<https://www.sciencedaily.com/releases/2021/04/210408131452.html>

<https://www.bbc.com/future/ bespoke/ follow-the-food/ why-our-food-needs-to-use-less-water/>

<https://www.carbonbrief.org/guest-post-understanding-the-water-energy-food-nexus-in-a-warming-climate>

### **Points to consider:**

- What is the current situation of water and food distribution in your country?
- How is Global Warming going to affect the environment in your country?
- What is your country's stance on global warming?
- Is there anything citizens can do to help to tackle the issue of water and food distribution?
- Should a 'flexitarian' diet be enforced globally?
- Should water usage be limited globally?