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The 3rd Jordanian Women Physicians Conference

Climate Change and its impact on public health and quality of life

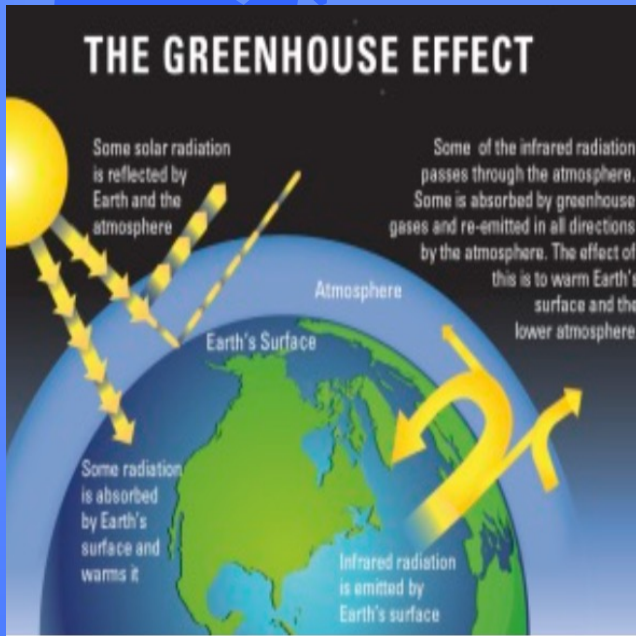
Dr Hazim El-Naser
Former Minister of Water & Agriculture
Chairman of the Middle East Water Forum

October 26, 2023



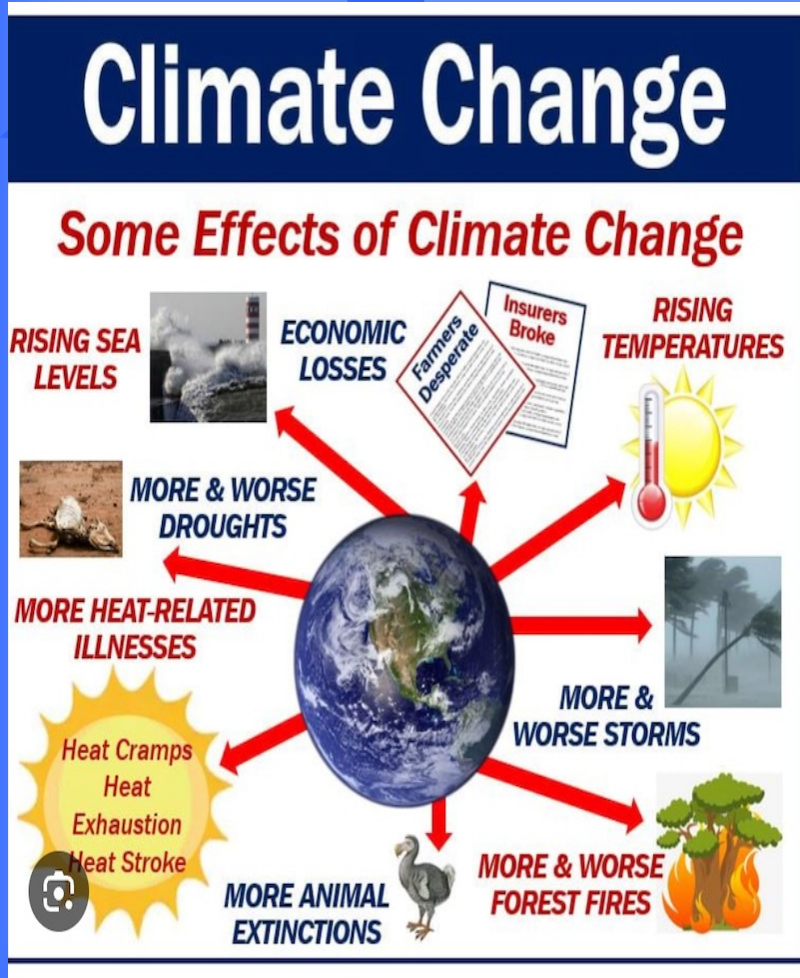
What is the difference between global warming and climate change?

Global warming means rise in global temperatures due mainly to the increasing concentrations of greenhouse gases (mainly from burning fossil fuel) in the atmosphere. Global warming simply is the increase in temperature of earth's atmosphere.



What is climate change?

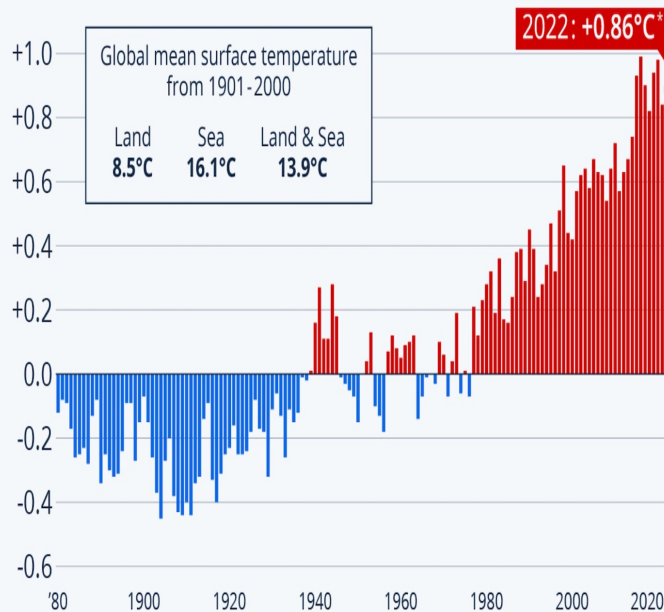
Climate change related to changes over a long-monitored period of time, e.g., change in precipitation amounts, low and high temperatures including heat waves, floods, and dust storms including wind direction and velocity.



Is global warming a reality?

The Last 8 Years Have Been the Warmest on Record

Global land and ocean surface temperature anomalies (degrees Celsius compared to the 20th century average)



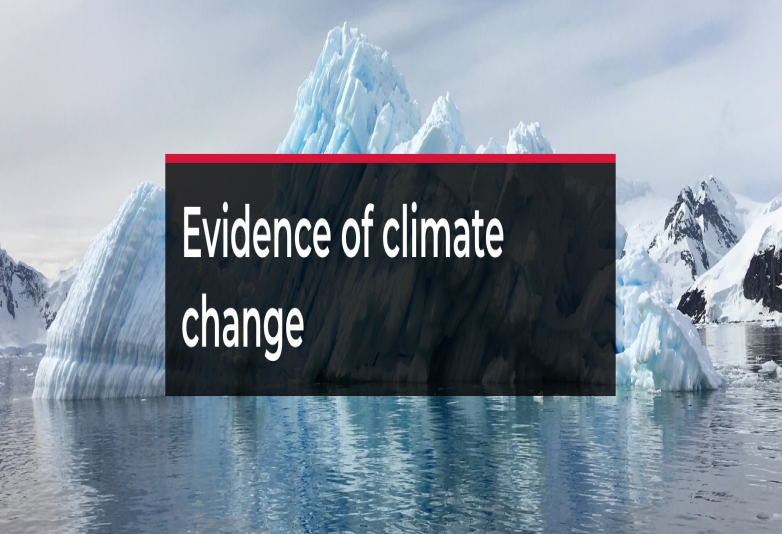
Independent and reliable research reports worldwide by many international organizations show that the Earth's average surface temperature has increase between 0.88 and 1.2°C since the start of the Industrial Revolution in 1850.

Is global warming causes climate changes?

Warmer temperatures over time as a result of greenhouse gases phenomena, are changing weather patterns and disrupting nature balance which leads to climate change.


Earth temperature rise by 1.2 degrees since pre-industrial, increased evaporation of the earth by 7%, more rainfall with high intensity

Do we have evidence for climate change?



Evidence of climate change

Ice melting and glaciers size decrease



Floods and draughts (Libya) mean devastation and desertification

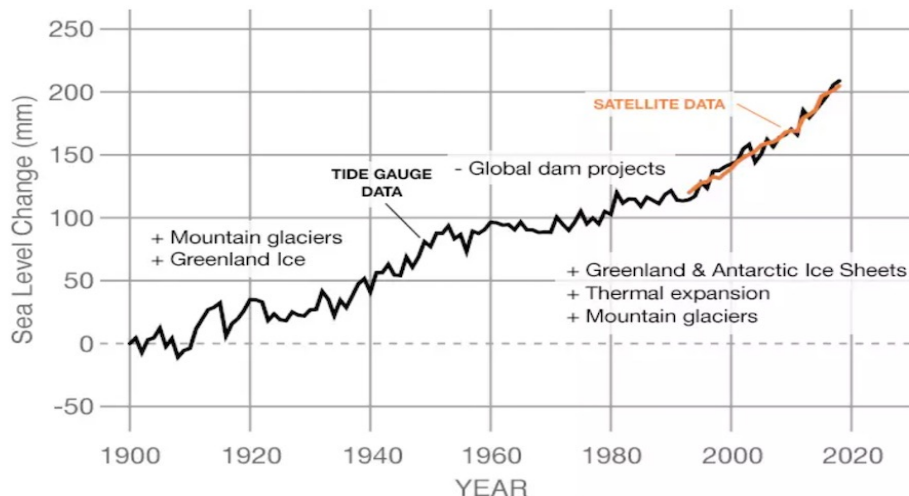
Do we have evidence for climate change?



Increase in temperature, draught (East Africa) including heat waves and storm dusts.

Data source: Frederikse et al. (2020)

Credit: NASA's Goddard Space Flight Center/PO.DAAC



Global sea level rise by about 20 centimeters

Important terms: Mitigation & Adaptation!

Mitigation means making the impacts of climate change less severe by preventing or reducing the emission of greenhouse gases into the atmosphere. E.g., increase use of renewable energy.

It addresses the root cause of the problem



Important terms: Mitigation & Adaptation

Adaptation can be summarized as the process of **adjusting life** in a changing climate and future effects of climate change. E.g., Early warning systems (Libya), Climate-resilient infrastructure (Libya) and Water supplies and security (Jordan and GCC).



Climate resilient city-solution



Non-resilient infrastructure

What is the key takeaway message, for the ME and the Arab Region, from the impact of climate change?

“It means simply more water shortages with its all associated negative impacts on public health and quality of life as a result of climate change”, Here are some examples to mention:

What is the takeaway message, for the ME and the Arab Region, from the impact of climate change?



Water shortages **limits access** to clean water for drinking and for basic hygiene at household level as well as in schools and in health-care facilities.

When water is minimum for basic needs, **sewage systems can fail and the threat of contracting diseases like cholera surges.**

Water scarcity takes a greater toll on women and children because they are often the ones responsible for collecting it, and therefore, impacting their life quality.



Climate Change and public health



More floods: More pollution & water borne- diseases

Water-borne pathogen contamination in water resources and related diseases are a major water quality concern throughout the world as a result of extreme floods caused by climate change.

Water-borne diseases (i.e., diarrhea, gastrointestinal illness) caused by various bacteria, viruses, and protozoa have been the causes of many outbreaks during floods, e.g., Bangladesh.

High temperature, means more Mesquites & Malaria

In places where malaria is already a problem, warmer temperatures will alter the growth cycle of the parasite in the mosquito enabling it to develop and grow faster, increasing transmission and thus having implications of more outreach.



Climate change will expand the range of mosquitoes that transmit malaria UIG/Getty Images

Sand and dust storms

Such storms triggered by climate change can have a detrimental effect on human health, especially for individuals with pre-existing respiratory conditions .



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Groundwater contamination by floods polluted with wastes & wastewater.

Groundwater is heavily used all over the world as the primary source of domestic drinking water supplies, and contaminated groundwater certainly enhances risk to public health. Globally, 50% of domestic water supply originates from groundwater, which makes its contamination because of climate change e.g., flood and non-resilient infrastructure a serious public health concern.

Groundwater contamination by floods polluted with wastes & wastewater.

Pathogen contamination (e.g., bacteria, protozoa, and viruses) poses a serious risk in water resources. The transport of pathogens from surface water to groundwater increases the vulnerability of groundwater.

70% of the water-borne microbial illness outbreaks have been associated with ground water pollution. Pathogens such as viruses are much smaller than bacteria and protozoa, and many can potentially reach groundwater through porous soil media.

In floods' events, like Libya, decomposition of dead bodies, goes to underground water threatening and polluting underground water being used for drinking water.

Groundwater contamination by floods polluted with wastewater.

Storm overflows and sewage pollution





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Thank you for your attention!

