The reasons behind the sweltering heat wave across Europe

Why in news?

Large swathes of Europe, the U.K. and the U.S. are sweltering under extreme heat wave conditions.

Why is the spike in summer temperatures a cause for worry?

- Europe is facing a torrid summer, with heat wave conditions expected to continue into August.
- Devastation due to extreme weather has been particularly acute in Western Europe.
- The region has been hit by raging wildfires, drought, and hundreds of heat-related deaths, ringing alarm bells about a looming climate emergency.
- While Europe has witnessed some hot summers in recent years, rarely have temperatures risen so high across so many regions at the same time.
- On July 19, the U.K. posted its highest temperature ever recorded, crossing 40°C, resulting in the government issuing its first ever red alert for extreme heat.
- Parts of France, Spain and Portugal recorded temperatures between 42 and 46 degrees.
- Dozens of towns and regions across Europe reeled under what has been described as a "heat apocalypse", which has caused widespread devastation this year.
- Wildfires caused by a combination of extreme heat and dry weather have destroyed 19,000 hectares of forest in south-western France, and thousands of people had to be evacuated to temporary shelters.
- Portugal reported more than 250 blazes over a period of two days, and 650 deaths due to heat-related illnesses in a span of one week.
- Neighbouring Spain lost 14,000 hectares of land to fires, with an estimated 360 deaths caused by extreme heat, mostly of elderly people.
- Italy, on the other hand, has been reeling under a drought, with the Po river basin, one of Europe's 'food bowls', not having received rains in more than 200 days.
- Across the Atlantic, with temperatures touching 43°C in some regions, around 69 million Americans were reported to be at risk of exposure to dangerous levels of heat and heat-related illnesses.

What is the reason behind the extreme heat waves?

- Scientists are near-unanimous that the heat waves are a result of climate change caused by human activity.
- Global temperatures have already risen by more than 1°C , and studies in the U.K. had shown that a one degree rise in temperature raises the probability of the country witnessing 40°C by ten times.
- The rising global temperature, which this year led to deviations above the normal by as

much as 15 degrees in Antarctica, and by more than 3 degrees in the North Pole, have also induced changes in old wind patterns.
- These changes turned Western Europe into what has been described as a heat dome, a low pressure area that began to attract hot air from northern Africa.
- In the case of the U.S., the record temperatures are being linked to changes in the jet stream, a narrow band of westerly air currents that circulate several kilometres above the earth's surface.
- While a conventionally strong jet stream would bring cooler air from the northern Atlantic, in recent years the jet stream has weakened and split into two, leading to intense and more frequent heat waves over parts of the American continent.
- All the affected nations have issued heat alerts and health advisories to its citizens, who are not used to such temperatures.

How will the extreme heat impact Europe and the U.S. over the long term?

- In Europe, the heat wave has renewed calls for determined action on climate mitigation measures.
- But in the U.S., the political leadership, especially in Republican states, many of which, like Texas, also happen to be extreme weather hot spots, are still reluctant to recognise climate change as the cause of the problem.
- With local politicians asking people to pray rather than acknowledge the role of a fossil-fuels in triggering extreme weather.
- In terms of adapting to the ongoing heat wave, the U.S. is marginally better placed, with a majority of the households fitted with air-conditioners.
- But only a tiny minority have ACs fitted in their homes in the U.K. and Western Europe.
- With the frequency and duration of heat waves rising this summer, Europe's energy requirements have shot up at just the wrong time, in the midst of rising fuel costs caused by a ban on Russian gas that European politicians imposed in response to the Ukraine invasion.
- In Germany, despite widespread acknowledgement of the urgent need to curb carbon emissions, even Green Party politicians are speaking of replacing Russian gas with domestic coal.
- The greater frequency, intensity and duration of the heat waves have also been linked to the growing incidence of drought in different parts of Europe.
- With the winters ending sooner, vegetation starts to grow sooner before the snows of winter have replenished the water tables and the rivers.
- This has led to progressive depletion of water tables and increasingly drier soil and shallower rivers.
- While the reduction in soil moisture has made forest fires more probable, drying rivers, critical for both agriculture and hydro power, have affected harvests and energy security.

What is the way forward?

- The economies of both Europe and the U.S. remain firmly bonded to fossil-fuel consumption.
- While Europe has been more vocal about cutting down emissions and has sought to

invest heavily in renewables, this shift has been disrupted by the Ukraine war.
- World leaders face a clear choice, it is either collective action or collective suicide.

Reference

https://www.thehindu.com/news/international/heat-wave-across-europe/article65662616.ece?homepage=true

