

A recent study on Heatwaves linked to carbon emissions

Prelims: Current events of national and international importance

Why in news?

Recently, a study assessing the link between carbon emissions from fossil fuel companies and heatwaves has been published.

- **Heatwaves** - Heatwaves consist of a **period of abnormally hot weather** that can **last from a few days to months**, where the maximum and minimum temperatures are unusually high for a location.
- **Heat dome** - It is a **weather phenomenon** caused by a high-pressure system that traps hot air in the atmosphere over a region, similar to a lid, for an extended period, creating dangerous and prolonged heat waves.
- **Findings of the study -**
 - The study analyzed 213 heatwaves that occurred worldwide between 2000 and 2023.
 - Due to **global warming**, heatwaves between 2000 and 2009 became about **20 times** more likely, and **about 200 times** more likely between 2010 and 2019.
 - Heatwaves between 2000 and 2009 were **1.4 degrees Celsius hotter**, while between 2010 and 2019 were made **1.7 degrees Celsius warmer**.

According to a **World Meteorological Organization (WMO) report**, between 2000 and 2019, **at least 4,89,000 people died annually** from heat, many from climate change-fueled heatwaves.

- The data from **EM-DAT (Emergency Events Database)** and **Carbon Majors Database** are assessed to understand the link between carbon emissions from fossil fuel companies and heatwaves.
- The heatwaves had been **directly linked to carbon emissions** from the world's biggest fossil fuel companies for the first time.
- The **emissions from any of the 14 biggest companies** — were

enough to cause 50 heatwaves that would have been impossible without climate change.

- The total emissions from these companies and their products contributed about **half of the increase in the intensity** of heatwaves since pre-industrial times.
- **Fossil fuel and cement companies** are not just abstract contributors to climate change, but their emissions have directly fueled heatwaves.
- **Significance of the study** - The findings could be **used in courts as evidence** and **hold fossil fuel companies accountable** for human suffering, ecosystem losses, and economic damages worldwide.

References

1. [Indian Express | Study linking heatwaves and Carbon emissions](#)
2. [The Guardian | Carbon emissions directly linked to heatwaves](#)