Increase in Frequency of Medicanes

Why in News

Scientists have warned that **extra-tropical storms** in the **Mediterranean Sea,** known as ‘Medicanes’ or ‘Mediterranean Hurricanes’, could become more frequent due to **human-induced climate change.**

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Key Points

- **Medicanes:**
  - Medicanes are **tropical-like** cyclones formed over the Mediterranean Sea.
  - With the surrounding dry climate and the relatively shallow waters of the sea, the occurrence of tropical-like cyclones is **infrequent.**
  - They typically **form in the fall or winter months and occur once or twice a year.**
  - On September 18, 2020, a medicane named **Lanos** made landfall along the coast of **Greece** and caused heavy rainfall and flooding in Greece and surrounding islands.
- **Comparison with Tropical Cyclones:**
  - These **occur more in relatively colder waters** than tropical cyclones, **hurricanes** and

typhoons. Hence, the cores of these storms are also cold, as compared to the warm cores of tropical cyclones (but warmer as compared to extra-tropical cyclones).
    - These are typically **smaller in diameter and have lower wind speeds than true tropical cyclones.**
    - Sometimes, **warm-cored tropical cyclones transform into cold-cored extratropical cyclones** and in rare cases, the opposite can also happen.

        - Such an event of extra tropical cyclone becoming a tropical cyclone occurred in November 2011 and caused severe flooding in parts of Spain, Italy and France, killing 11 people.
- **Increase in Occurrence**

    - Medicanes have **increased in number in the past half-century.**
    - Two of these storms, one in 2005 and another in 2012, even formed over the **Black Sea**, which is a much smaller water body than the Mediterranean Sea.
    - Due to global warming, warmer sea surface temperatures in the Mediterranean can allow the storms to **take on more tropical appearances and characteristics,** increasing the wind speeds and making the storms more intense and cause heavier rainfall.
    - This year is a **mild La Niña,** according to the **World Meteorological Organization**. La Niña tends to reduce the land falling hurricanes but even if the **La Niña this year is mild, the hurricane season is very active.** This implies that the impacts of El Niño Southern Oscillation (ENSO) **are being modulated by global warming** in all oceans, including the Mediterranean.

        - La Niña is the cooling phase of the ENSO cycle in the equatorial Pacific Ocean, as opposed to the warming El Niño phase. It is characterised by the **unusual cooling of the central and east-central equatorial Pacific Ocean.**
    - **The** Special Report on the Ocean and Cryosphere in a Changing Climate released Intergovernmental Panel on Climate Change (IPCC) in 2019 warns of increased temperatures **and more frequent extreme El Niño and La Niña events.**
- **Threats:**

    - Increase in frequency of medicanes will be a threat for already vulnerable populations living in North Africa, possibly triggering **human migration**.
    - They could also be a menace for European countries like Italy and Greece.

Source: DTE