Syllabus subtopic: Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., geographical features and their location-changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

Prelims and Mains focus: about cyclone Sarai; tropical cyclones: types and formation; India-Fiji relations

News: Tropical Cyclone Sarai (Category 2) was moving slowly away from Fiji on Sunday, leaving two people dead and more than 2,500 needing emergency shelter. The cyclone damaged houses, crops and trees, cut power and forced the cancellation of several flights, stranding holidaymakers visiting the island nation, which is a major tourist draw.

About Tropical cyclones

- A tropical cyclone is rapidly rotating storm system characterized by low pressure centre (eye), a closed low-level atmospheric circulation, strong winds and a spiral arrangement of thunderstorms (cumulonimbus clouds) that produce heavy rain.

- Depending upon its location and strength, a tropical cyclone is referred by different names:
  1. Typhoons in Western North Pacific
  2. Willy-willies in Australia
  3. Baguio in Philippine Islands
  4. Hurricanes around North America
  5. Taitu in Japan
  6. Cyclone in Indian Ocean.

- Tropical cyclone is formed over the ocean surface, because they are like giant engines that use warm, moist air as fuel; that is why they form only over warm ocean water near equator and not on equator as Coriolis Force is needed to form cyclone which is not there on equator. This is the reason tropical cyclone is formed 5 degree to 10 degree away from equator.
Low pressure centre in ocean tends to inward circular flow of air and warm air goes upward as this warm air goes up its temperature goes on increasing. The sky above the ocean has to be clear so as to facilitate vertical rise of warm air. And this rapidly rotating warm air flow is nothing but Cyclone.

Categories of Cyclone

1. Category one (tropical cyclone)
   - Negligible house damage. Damage to some crops, trees and caravans. Craft may drag moorings.
   - A category one cyclone's strongest winds are GALEs with typical gusts over open flat land of 90-125kph.
   - These winds correspond to Beaufort 8 and 9 (gales and strong gales).

2. Category two (tropical cyclone)
   - Minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of power failure. Small craft may break moorings.
   - A category two cyclone’s strongest winds are DESTRUCTIVE winds with typical gusts over open flat land of 125-164kph.
   - These winds correspond to Beaufort 10 and 11 (storm and violent storm).

3. Category three (severe tropical cyclone)
   - Some roof and structural damage. Some caravans destroyed. Power failures likely.
   - A category three cyclone’s strongest winds are VERY DESTRUCTIVE winds with typical gusts over open flat land of 165-224kph.
   - These winds correspond to the highest category on the Beaufort scale, Beaufort 12 (hurricane).

4. Category four (severe tropical cyclone)
   - Significant roofing loss and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failures.
   - A category four cyclone’s strongest winds are VERY DESTRUCTIVE winds with typical gusts over open flat land of 225-279kph.
   - These winds correspond to the highest category on the Beaufort scale, Beaufort 12 (hurricane).
5. Category five (severe tropical cyclone)

- Extremely dangerous with widespread destruction.
- A category five cyclone’s strongest winds are VERY DESTRUCTIVE winds with typical gusts over open flat land of more than 280kph.
- These winds correspond to the highest category on the Beaufort scale, Beaufort 12 (hurricane).

About FIJI

- Fiji, country and archipelago is located in the South Pacific Ocean. It surrounds the Koro Sea about 1,300 miles (2,100 km) north of Auckland, New Zealand.

- The archipelago consists of some 300 islands and 540 islets scattered over about 1,000,000 square miles (3,000,000 square km). Of the 300 islands, about 100 are inhabited. The capital, Suva, is on the southeast coast of the largest island, Viti Levu (“Great Fiji”).

- Fiji is one amongst advanced economies in the Pacific due to an abundance of forest, mineral, and fish resources.

- Today, the main sources of foreign exchange are its tourism industry and sugar exports.

FIJI’s INDIA link

- India’s links with Fiji commenced in 1879 when Indian labourers were brought here under indenture system to work on sugarcane plantations. Between 1879 and 1916 around 60,553 Indians were brought to Fiji. Beginning with early 20th century, Indian traders and others also started arriving in Fiji. In 1920, the indenture system was abolished.
- There are strong cultural links between the countries as nearly half of Fiji’s population is of Indian descent.
- Prior to Fiji’s independence in 1970, India had a Commissioner since 1948 to look after the interests of people of Indian origin. It was later upgraded to High Commissioner after independence.
Fiji’s Prime Minister Ratu Sir Kamisese Mara visited India in 1971 and Prime Minister Smt. Indira Gandhi visited Fiji in 1981.

Fiji is important to India for stronger engagement in Pacific Islands.