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# CURRENT AFFAIRS

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## KAMPALA DECLARATION

This article covers "Daily Current Affairs" and the topic details "Kampala Declaration". The topic "Kampala Declaration" has relevance in the "Environment and Ecology" section of the UPSC CSE exam.

### For Prelims:

What is the Kampala Declaration?

### For Mains:

GS3: Environment and Ecology

### Why in the news?

A total of 48 African nations have recently endorsed the Kampala Ministerial Declaration on Migration, Environment, and Climate Change (KDMECC).

### Kampala Declaration:

- Kampala Ministerial Declaration on Migration, Environment, and Climate Change (KDMECC) is **co-hosted by the governments of Kenya and Uganda** with support from the **International Organization for Migration (IOM)** and the **United Nations Framework Convention on Climate Change (UNFCCC)**.
- The KDMECC is a pioneering initiative led by member states to effectively address the interconnected challenges of human mobility and climate change in Africa.
- It represents a **practical and action-oriented framework aimed at dealing with climate-induced migration**. The declaration's expansion across the continent was a subject of discussion during a conference.



### Significance:

- Africa stands as one of the most susceptible continents to the repercussions of climate change. The increasing occurrence and severity of extreme weather events directly impact migration patterns.
- Recent reports indicate that there were over 7.5 million new internal displacements due to disasters in the preceding year. If no substantial actions are taken, the number of internal migrants within Africa could soar to as high as 105 million individuals.
- Consequently, addressing the connection between human mobility, climate change, and environmental shifts has gained substantial global importance and urgency.

### Climate Change Challenges:

- **Greenhouse Gas Emissions:** Global emissions of greenhouse gases continued to escalate in 2022. Carbon dioxide levels reached 149% of pre-industrial levels, methane surged to 262% of pre-industrial levels, and nitrous oxide reached 124%.

- **Global Mean Temperature:** 2022 witnessed the planet being  $1.15 \pm 0.13$  °C warmer than the pre-industrial average. This marked the eighth consecutive year of record warmth.
- **Precipitation Patterns:** Disparities in precipitation prevailed in 2022, with regions experiencing excessive rainfall while others faced deficits. Areas of above-normal precipitation included significant parts of Asia, the Caribbean, and parts of Africa.
- **Ocean Heat Content:** The atmosphere's increasing GHG concentrations led to warming temperatures on land and in the oceans. Projections indicate a continuous ocean warming trajectory, irreversible on long time scales. In 2022, marine heatwaves impacted 58% of the ocean's surface.
- **Sea Level Rise:** Global mean sea level persisted in its upward trend in 2022, rising approximately  $3.4 \pm 0.3$  mm annually over the past three decades.
- **Extreme Events:** Escalating global temperatures contributed to more frequent and severe extreme weather incidents worldwide, encompassing heatwaves, floods, droughts, wildfires, and storms.

**Global Impacts:** Climate change consequences reverberated globally:

- Indian monsoons deviated from their usual timing.
- Northeast India faced both floods and dry spells.
- Pakistan encountered devastating floods affecting millions.
- Europe's record temperatures triggered droughts and reduced river flows.
- North America and Australia battled extensive forest fires.

**Recommendations and Way Forward:** Addressing climate challenges requires substantial efforts, including:

- **Investments in Resilience:** Prioritising investments to bolster resilience, encompassing agricultural risk mitigation, food security, and the enhancement of warning systems against floods and cyclones.
- **Review of Paris Targets:** Reevaluation of the Paris Agreement's voluntary targets to ensure they effectively restrict temperature escalation.
- **COP28 and Progress Assessment:** The 2023 United Nations Climate Change Conference (COP28) in Dubai will serve as a pivotal juncture to evaluate global progress under the Paris Agreement. The conference is expected to identify actions necessary to bridge existing gaps and enhance climate action worldwide.

**Sources:**

Kampala Declaration on climate change, human mobility now has 48 African countries as members (downtoearth.org.in)

**Q1. Which of the following correctly describe Kampala Declaration:**

- An economic initiative focused on improving trade relations among African countries.
- A political alliance formed by African nations to counter global superpowers.
- A practical framework aimed at addressing the nexus of human mobility and climate change in Africa.
- A treaty focusing solely on wildlife conservation efforts in Africa

**Answer: (c)**

**Q2. Consider the following counties:**

- Somalia
- South Sudan
- Ethiopia
- Kenya
- Democratic Republic of Congo

**How many of the abovementioned countries share a land boundary with Uganda?**

- Only one
- Only two
- Only three
- All Four

**Answer: (c)**

**Q3. Examine the significance of the Kampala Ministerial Declaration on Migration, Environment, and Climate Change (KDMECC) in the context of Africa's vulnerability to climate change.**

**Gaurav Nikumbh**

# EQUATORIAL ORIGIN CYCLONES AND PACIFIC DECADAL OSCILLATION

This article covers "Daily Current Affairs" and the topic details "Equatorial Origin Cyclones and Pacific Decadal Oscillation". The topic "Equatorial Origin Cyclones and Pacific Decadal Oscillation" has relevance in the Geography section of the UPSC CSE exam.

## For Prelims:

What are Equatorial-Origin Cyclones?

What is the Pacific Decadal Oscillation?

ENSO and PDO Interaction

## For Mains:

GS 1: Geography

PDO's impact?

## Why in the news:

In recent years, there has been a noticeable decrease in the activity of equatorial-origin cyclones. However, a study featured in the journal Nature Communications proposes a potential shift in this pattern. It suggests that the interplay between global warming and the Pacific Decadal Oscillation (PDO) might lead to an increased occurrence of these cyclones in the forthcoming decades

## What are Equatorial-Origin Cyclones?

- Equatorial-Origin or Low Latitude Cyclones (LLCs) are cyclonic systems originating **between 5°N and 11°N latitude**. These cyclones are **generally smaller in size compared to those formed at higher latitudes** but tend to intensify more rapidly under certain conditions.
- While cyclones forming near the equator are **relatively uncommon**, when the sea surface temperatures are warm, these systems can gather more moisture and energy, leading to increased intensity. The **Western Pacific Ocean is a prominent area where a majority of these cyclones originate**.
- An example of such a cyclone is the 2017 Cyclone Ockhi, which had an equatorial origin and traveled over 2000 km, causing significant devastation in regions like Kerala, Tamil Nadu, and Sri Lanka.
- During the post-monsoon season (October to December), the north Indian Ocean (NIO) becomes a hotspot for the formation of LLCs. Despite constituting about 60% of all Tropical Cyclones formed in the NIO since 1951, these low-latitude cyclones have received relatively less attention in terms of research and study.



## What is the Pacific Decadal Oscillation?

- The Pacific Decadal Oscillation (PDO) is a prolonged pattern of oceanic variation in the Pacific Ocean. It is characterized by cyclical shifts that occur over a span of approximately 20 to 30 years. Similar to the El Niño-Southern Oscillation (ENSO), the PDO exhibits alternating 'warm' and 'cool' phases.
- During a positive (warm) PDO phase, the western Pacific Ocean experiences cooler sea surface temperatures while the eastern side becomes warmer. Conversely, during a negative (cool) PDO phase, the pattern reverses with warmer temperatures in the western Pacific and cooler temperatures in the east.
- The term "Pacific Decadal Oscillation" was introduced around 1996 by Steven Hare to describe this long-term oscillation.

## PDO's impact :

- **Global Climate:** The PDO's phase can substantially influence the global climate. It affects the frequency of Pacific and Atlantic hurricane activity, the occurrence of droughts and floods around the Pacific region, the productivity of marine ecosystems, and the overall temperature patterns across the globe.
- **Cyclones:** Notably, the PDO phase has implications for cyclone activity. A positive (warmer) PDO phase tends to result in fewer equatorial-origin cyclones. This is due to the altered sea surface temperature patterns affecting the conditions conducive for cyclone formation and intensification.
- **Recent Trends:** In 2019, the PDO shifted into a cooler, negative phase. If this trend continues, it could lead to an increase in the frequency of equatorial-origin cyclones during the post-monsoon months.

#### ENSO and PDO Interaction:

- **Positive ENSO with Positive PDO:** This combination can lead to intensified impacts. A positive ENSO phase (El Niño) involves warmer-than-average sea surface temperatures in the central and eastern Pacific. If this aligns with a positive PDO phase (warmer eastern Pacific), the impacts of El Niño, such as droughts and altered rainfall patterns, might be exacerbated.
- **Negative ENSO with Positive PDO:** While a negative ENSO phase (La Niña) generally brings more rain to India, it might result in even wetter conditions in certain regions if it coincides with a positive PDO phase.

#### PDO vs ENSO:

- **Time Scale:** ENSO events, characterized by El Niño and La Niña phases, typically occur over a 2 to 7-year cycle. In contrast, PDO operates on a longer time scale, with its phases lasting about 20 to 30 years.

**Detection:** ENSO phases can be identified relatively quickly, with their impacts becoming evident within a year. On the other hand, determining whether the PDO is in a positive or negative phase requires observing ocean temperatures and atmospheric interactions over several years.

**Source:**

<https://www.thehindu.com/sci-tech/energy-and-environment/warming-pacific-points-to-rise-in-cyclones-over-india-study/article67245627.ece>

#### Q.1 Consider the following statements regarding Equatorial-Origin or Low Latitude Cyclones (LLCs):

1. LLCs intensify more rapidly in colder sea surface temperatures near the equator.
2. The Cyclone Ockhi is an example of an equatorial-origin cyclone.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**ANSWER:B**

#### Q.2 Consider the following statements regarding Pacific Decadal Oscillation (PDO) and El Niño-Southern Oscillation (ENSO).

1. PDO's positive phase is associated with cooler sea surface temperatures in the western Pacific and warmer temperatures in the eastern side.
2. A combination of positive ENSO and positive PDO phases can intensify climate impacts, including droughts and altered rainfall patterns.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**ANSWER:B**

**Q.3 Examine the characteristics and significance of Equatorial-Origin or Low Latitude Cyclones (LLCs) in the context of cyclone formation. How do these cyclones differ from their higher latitude counterparts**

**Rishabh**