



Greenhouse Gas Concentrations Hit Record Highs: UN

For Prelims: [United Nations](#), [World Meteorological Organization](#), [Greenhouse gases](#), [Paris Agreement](#), [Kyoto Protocol](#), [Paris Agreement](#), [International Solar Alliance](#), [Global Biofuel Alliance](#)

For Mains: Major Factors Responsible for Rising Greenhouse Gases Concentration, Major Implications of Rising Greenhouse Gas Concentrations, Key Initiatives to Curb Greenhouse Gas Emission.

[Source: TH](#)

Why in News?

Recently, the [United Nations](#) issued a warning highlighting the unprecedented surge in [greenhouse gas concentrations in the atmosphere](#), setting new records in 2022.

- **UN's [World Meteorological Organization \(WMO\)](#)'s 19th Annual Greenhouse Gas Bulletin** outlines the concerning implications, foreseeing heightened temperatures, intensified extreme weather events, and elevated sea levels as a consequence.

What are the Major Highlights of the Bulletin?

- **Unprecedented Greenhouse Gas Levels:** WMO in its 19th annual Greenhouse Gas Bulletin stated that levels of the three main greenhouse gases: [carbon dioxide](#), **methane**, and **nitrous oxide**, all surpassed previous records, marking an escalation in their atmospheric presence.
 - In 2022, **carbon dioxide concentrations reached 418 parts per million, methane at 1,923 parts per billion, and nitrous oxide at 336 parts per billion**, significantly surpassing pre-industrial levels by 150%, 264%, and 124%, respectively.
 - Of the three major greenhouse gases, carbon dioxide (CO₂) accounts for about **64% of the warming effect on the climate**.
 - Methane ranks as the second-largest contributor to climate change, causing about **16% of warming**.
 - Nitrous oxide contributes around 7% to the warming effect.
- **Challenges to Paris Agreement Goals:** The **2015 [Paris Agreement](#)** aimed to limit global warming to below two degrees Celsius above pre-industrial levels and preferably 1.5C. Unfortunately, the **global mean temperature in 2022 already exceeded the 1.5C mark, reaching 1.15C above pre-industrial levels**.
 - The current trajectory indicates a grim reality, a temperature rise significantly surpassing the Paris Agreement's targets by the end of the century, leading to catastrophic consequences like extreme weather, ice melt, and ocean acidification.
- **Projected Climate Disruptions:** The continuous rise in these heat-trapping gases forecasts a future plagued by intensified climate disruptions.
 - The bulletin underscores the **imperative need to swiftly reduce [fossil fuel consumption](#)** to mitigate these escalating risks.
 - The climate system could be **nearing critical "tipping points,"** where certain changes lead to irreversible cascades, like the **rapid die-back of the Amazon, North Atlantic circulation slowdown, and destabilization of major ice sheets**.

What are Greenhouse Gases?

- **Greenhouse gases (GHGs) are a group of naturally occurring and human-generated gases** present in the Earth's atmosphere.
 - These gases have the unique property of absorbing and emitting heat, trapping thermal energy within the atmosphere.
- They **act as a thermal blanket, allowing sunlight to enter the atmosphere** while preventing a significant portion of the absorbed heat from escaping back into space.
 - This phenomenon, known as the greenhouse effect, helps regulate the Earth's temperature, making it habitable for life.
- However, human activities, such as burning fossil fuels, deforestation and industrial processes, have significantly increased the concentration of these gases, **amplifying the greenhouse effect and leading to global warming and subsequent climate change.**
- Some major greenhouse gases include: **Carbon Dioxide (CO₂), Methane (CH₄), Nitrous Oxide (N₂O) and water vapour.**

What are the Major Factors Responsible for Rising Greenhouse Gases Concentration?

- **Fossil Fuel Combustion:** The predominant contributor to **carbon dioxide (CO₂) emissions is the burning of fossil fuels for energy.**
 - Industrial activities, transportation, and power generation heavily rely on coal releasing CO₂ into the atmosphere.
- **Deforestation and Land Use Changes:** Forests act as [carbon sinks](#), absorbing CO₂. Deforestation and land-use changes, primarily for agriculture or urbanization, reduce these sinks, **releasing stored carbon and reducing the Earth's capacity to absorb CO₂.**
 - Deforestation has **transformed sections of the [Amazon rainforest](#)**, previously a carbon sink, into a significant emitter of carbon.
- **Agricultural Practices:** Agriculture contributes significantly to **methane (CH₄) and nitrous oxide (N₂O) emissions.** Livestock farming generates methane, while the use of nitrogen-based fertilizers releases nitrous oxide.
- **Improper Waste Management:** Improper waste management, **especially in landfills**, leads to the generation of methane as organic waste decomposes in anaerobic conditions.
- **Natural Processes:** [Volcanic eruptions](#), **wildfires, and natural decay** processes also release GHGs. While these events have occurred historically, **human activities have exacerbated their frequency and impact.**
- **Urbanization and Population Growth:** Rapid **urban expansion and population growth** increase energy demand, vehicular emissions, and the need for infrastructure, leading to higher GHG emissions.
- **Permafrost Thaw and Methane Release:** As permafrost thaws due to rising temperatures, **it releases methane, a potent greenhouse gas trapped within the frozen soil.**
 - This creates a feedback loop, where more methane released exacerbates global warming, further accelerating permafrost thaw.

What can be the Major Implications of Rising Greenhouse Gas Concentrations?

- **Induced Climate Change:** Increased greenhouse gases intensify the greenhouse effect, **trapping more heat in the atmosphere.**
 - This results in **global warming, leading to altered weather patterns**, rising temperatures, and shifts in precipitation, which can cause **droughts, [heatwaves](#), floods, and more severe storms.**
- **Melting Ice and Rising Sea Levels:** Warming temperatures **cause glaciers and polar ice caps to melt**, contributing to rising sea levels.
 - This phenomenon **poses threats to coastal communities, biodiversity, and infrastructure**, leading to coastal erosion and increased risks of flooding.

- **Food and Water Security:** Changes in temperature and precipitation patterns can **affect agricultural productivity**, leading to crop failures and reduced food security.
 - **Water scarcity or excessive rainfall** can impact water availability for drinking, agriculture, and industry.
- **Ocean Acidification:** Excess CO₂ absorbed by oceans leads to [acidification](#), impacting marine life.
 - **Acidic waters hinder the ability of certain marine organisms to build shells and skeletons**, affecting coral reefs, shellfish, and plankton—the foundation of marine food chains.
- **Geopolitical Tensions:** **Climate-induced displacement**, resource scarcity, and competition for habitable areas could lead to **geopolitical tensions and conflicts over land, water, and resources**, particularly in regions already facing socio-political instability.

What are the Key Initiatives to Curb Greenhouse Gas Emission?

- **Global:**
 - [Kyoto Protocol](#)
 - [Paris Agreement](#)
 - [International Solar Alliance](#)
 - [Global Biofuel Alliance](#)
- **India:**
 - **Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI) emission norms**
 - [National Action Plan on Climate Change \(NAPCC\)](#)
 - [Energy Conservation \(Amendment\) Act 2022](#)
 - [India's Intended Nationally Determined Contributions \(INDCs\)](#)
 - [Panchamrit Goal](#)

Way Forward

- **Mitigation Strategies:** Implement policies and technologies focused on **reducing greenhouse gas emissions** across sectors such as energy, transportation, industry, and agriculture.
 - This includes **transitioning to renewable energy sources, improving energy efficiency**, promoting sustainable land use, and reducing fossil fuel dependence.
- **Adaptation Measures:** Develop and implement adaptation strategies to cope with the existing and projected impacts of climate change.
 - This involves **enhancing resilience in infrastructure, agriculture, water management, and urban planning** to withstand extreme weather events and changing climate patterns.
- **International Collaboration:** Foster global cooperation and commitment to climate action through international agreements and partnerships.
 - Encourage nations to **honor and strengthen their commitments under agreements like the Paris Agreement**, setting ambitious targets to limit global temperature rise.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Mains

Q. Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. **(2022)**

Q. Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? **(2021)**

Q. Assess the impact of global warming on the coral life system with examples. **(2019)**

Q. 'Climate Change' is a global problem. How will India be affected by climate change? How Himalayan and coastal states of India will be affected by climate change? (2017)

Government's Push for Data Ownership

For Prelims: [Artificial intelligence \(AI\)](#), Digital India Bill, Anonymised Data, [Personal Data Protection Act, 2023](#)

For Mains: Regulating Data Governance and Privacy, Issues related to Data Privacy and Data protection

Source: [IE](#)

Why in News?

The Indian Government is reportedly considering directing major tech giants like Facebook, Google, and Amazon to **share anonymised personal data** for a **government-backed database**.

- This potential development, outlined in the upcoming **Digital India Bill, 2023** focused on data ownership and could impact the landscape of [artificial intelligence \(AI\) models](#).

What is Anonymised Data?

- It is any data set that **does not contain personally identifiable information**. It could include **aggregated information**, such as the overall health data of a particular demography, weather and climate data of an area, and traffic data, among others.
 - It is **different from personal data**, which is data that relates to an identified or identifiable individual, such as email, biometrics, etc.
- Anonymised data can be used for various purposes, such as **statistical analysis, market research, product development**, etc., **without compromising the privacy** of the individuals whose data was used.

Why is the Government Considering Access to Big Tech's Data?

- This move is part of an upcoming **Digital India Bill**, in which there is a provision to mandate big tech companies to deposit all the **non-personal data** they hold into a government-backed database known as the India datasets platform.
 - As per the working group constituted by the Ministry of Electronics and Information Technology, the India datasets platform, is envisioned as a unified national data sharing and exchange platform catering to various stakeholders, including governments, private companies, [Micro, Small and Medium Enterprises \(MSMEs\)](#), academia, and more.
 - Non-personal data held by the India datasets platform could be monetized, playing a crucial role in economic benefits.
- Earlier in May 2022, the government released the [draft National Data Governance Framework Policy](#) under which it **merely "encouraged" private companies** to share non-personal data with startups and Indian researchers.
- The government argues that **big tech companies have benefited** from building algorithms based on Indians' non-personal data and **should not claim exclusive ownership over it**.

What are the Key Highlights of the Digital India Bill?

- The Digital India Bill, 2023 (if passed, will serve as the successor of the [Information Technology Act of 2000](#)) is a crucial part of a comprehensive legal framework that includes various legislative measures.
- It is part of a comprehensive approach that includes measures like the [Digital Personal Data Protection Act, 2023](#), the [draft Indian Telecommunication Bill, 2022](#), and a policy addressing the governance of non-personal data.
- The bill aims to **boost the AI ecosystem in India** by providing a robust foundation for data-driven innovation and development.
- This bill has been designed to establish comprehensive oversight over India's digital landscape, effectively tackling contemporary challenges like [cybercrime](#), **data protection**, [deepfakes](#), **competition among internet platforms**, online safety, and the [negative impact of artificial intelligence \(AI\)](#).

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q1. 'Right to Privacy' is protected under which Article of the Constitution of India? **(2021)**

- (a) Article 15
- (b) Article 19
- (c) Article 21
- (d) Article 29

Ans: (c)

Q2. Right to Privacy is protected as an intrinsic part of Right to Life and Personal Liberty. Which of the following in the Constitution of India correctly and appropriately imply the above statement? **(2018)**

- (a) Article 14 and the provisions under the 42nd Amendment to the Constitution.
- (b) Article 17 and the Directive Principles of State Policy in Part IV.
- (c) Article 21 and the freedoms guaranteed in Part III.
- (d) Article 24 and the provisions under the 44th Amendment to the Constitution.

Ans: (c)

Mains

Q. Examine the scope of Fundamental Rights in the light of the latest judgement of the Supreme Court on Right to Privacy. **(2017)**

Ixchiq Vaccine for Chikungunya

[Source: TH](#)

Why in News?

Recently, the **Food and Drug Administration (FDA) in the United States** approved the world's inaugural vaccine for [chikungunya](#).

- This novel vaccine, named **Ixchiq** and developed by **European vaccine manufacturer Valneva**, marks a significant leap in combating the **chikungunya virus (CHIKV)**.

What are the Key Features of Ixchiq Vaccine?

- It is administered as a single dose via injection into the muscle. It contains a **live, weakened version of the chikungunya virus**, potentially causing symptoms akin to the disease in vaccine recipients.
- The vaccine has been approved for administration **in people who are 18 years or older**, and are at increased risk of exposure to the virus.

What is Chikungunya?

- **About:** Chikungunya is a **mosquito-borne viral disease**. It was **first recognized in 1952** during an outbreak in southern Tanzania.
 - It is a [ribonucleic acid \(RNA\) virus](#) that belongs to the **alphavirus genus of the family Togaviridae**.
- **Symptoms:** Chikungunya causes **fever and severe joint pain**, which is often debilitating and varies in duration.
 - **Dengue and Zika have similar symptoms to chikungunya**, making chikungunya easy to misdiagnose.

Note: The term "**chikungunya**" originates from the **Kimakonde language** (spoken by the Makonde people, an ethnic group of Tanzania and Mozambique), translating to "**to become contorted**," illustrating the stooped posture of individuals experiencing severe joint pain.

- **Transmission: Chikungunya is transmitted to humans by the bites of infected female mosquitoes.**
 - Most commonly, the mosquitoes involved are [Aedes aegypti](#) and [Aedes albopictus](#).
 - These two species can also transmit other mosquito-borne viruses, including dengue.
 - They bite throughout daylight hours, although there may be peaks of activity in the early morning and late afternoon.
- **Prevalence:** According to WHO, It is prevalent in **Africa, Asia, and the Americas**; but sporadic outbreaks have been reported in other regions.
- **Treatment Options:** Presently, there is **no cure for chikungunya, with symptomatic relief** being the primary approach. Treatment involves the use of **analgesics, antipyretics, rest, and adequate fluid intake**.
- **Prevention Strategies: Prevention primarily revolves around mosquito control activities, including public health outreach, civic maintenance, use of medicated mosquito nets, and eliminating water stagnation to prevent mosquito breeding.**
- Related Indian Government Initiatives:
 - The [National Vector Borne Disease Control Programme \(NVBDCP\)](#) is an umbrella programme for prevention and control of vector borne diseases (VBDs), viz., Malaria, Lymphatic Filariasis, Kala-azar, [Dengue](#), [Chikungunya](#) and [Japanese Encephalitis \(JE\)](#).

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q.1 Consider the following statements: (2017)

1. In tropical regions, Zika virus disease is transmitted by the same mosquito that transmits dengue.
2. Sexual transmission of Zika virus disease is possible.

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

Ans: (c)

Q.2 'Wolbachia method' is sometimes talked about with reference to which one of the following? (2023)

- (a) Controlling the viral diseases spread by mosquitoes
- (b) Converting crop residues into packing material
- (c) Producing biodegradable plastics
- (d) Producing biochar from thermo-chemical conversion of biomass

Ans: (a)

Flood in Somalia

For Prelims: Flood in Somalia, U.N. Office for the Coordination of Humanitarian Affairs (OCHA), [Floods](#), [El Nino](#), [Indian Ocean Dipole](#).

For Mains: Flood in Somalia, Atmospheric Circulation & Weather Systems.

[Source: TH](#)

Why in News?

Recently, the **U.N. Office for the Coordination of Humanitarian Affairs (OCHA)**, has described [Floods](#) that uprooted hundreds of thousands of people in Somalia and neighbouring countries in East Africa following a historic drought as a **Once-in-a-Century event**.

- **The primary cause of the floods in Somalia has been attributed to torrential rainfall, exacerbated by climatic phenomena like [El Niño](#) and the [Indian Ocean Dipole](#).**
- The impact isn't confined to Somalia alone; neighboring Kenya has also been affected, with the death toll reaching 15 and regions like Mombasa, Mandera, and Wajir experiencing significant challenges due to the floods.

What is the Office for the Coordination of Humanitarian Affairs (OCHA)?

- OCHA is the part of the United Nations Secretariat **responsible for bringing together**

humanitarian actors to ensure a coherent response to emergencies.

- OCHA also ensures there is a framework within which each actor can contribute to the overall response effort.

What is El Nino?



El Nino Southern Oscillation (ENSO)

Describes the fluctuations in temperature between the ocean and atmosphere **in the east-central Equatorial Pacific**

Significance:

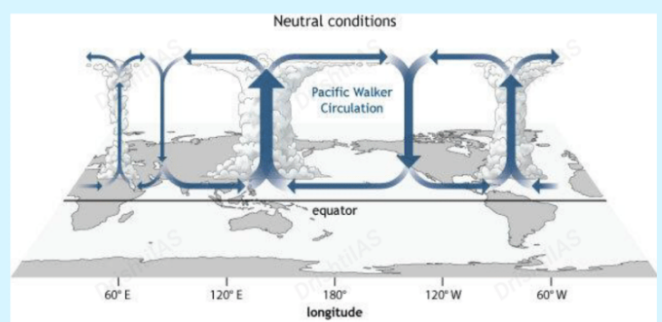
- Ability to change the global atmospheric circulation, influencing temperature and precipitation worldwide

States of ENSO:

- The two opposite phases - **El Niño** and **La Niña**
- The middle of the continuum - **Neutral**

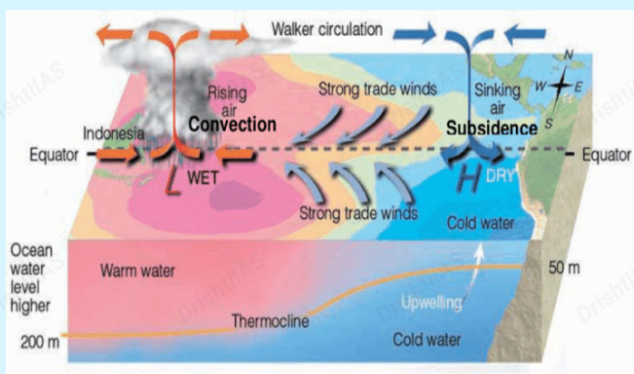
Walker Circulation (WC)

- An **atmospheric system of air flow** in the equatorial Pacific Ocean
 - The trade winds across the tropical Pacific flow from east to west: air rises above the warm waters of the western Pacific, flows eastward at high altitudes, and descends over the eastern Pacific
- WC and ENSO:
 - A weak/reverse WC produces **El Niño**
 - Stronger WC results in **La Niña**



Normal (non ENSO) Conditions in the Pacific Ocean

NEUTRAL ENSO



- **Trade winds (easterlies) blow west** along the equator, taking warm water from S. America towards Asia
- To replace that warm water, **cold water rises from the depths** — a process called **upwelling**
 - **El Niño and La Niña** are two climate patterns that **break these normal conditions**
- During an El Niño, sea level pressure tends to be lower in the eastern Pacific and higher in the western Pacific while the opposite tends to occur during a La Niña
 - This see-saw in atmospheric pressure between the eastern and western tropical Pacific is called the **Southern Oscillation (SO)**



Drishti IAS

What is the Indian Ocean Dipole (IOD)?

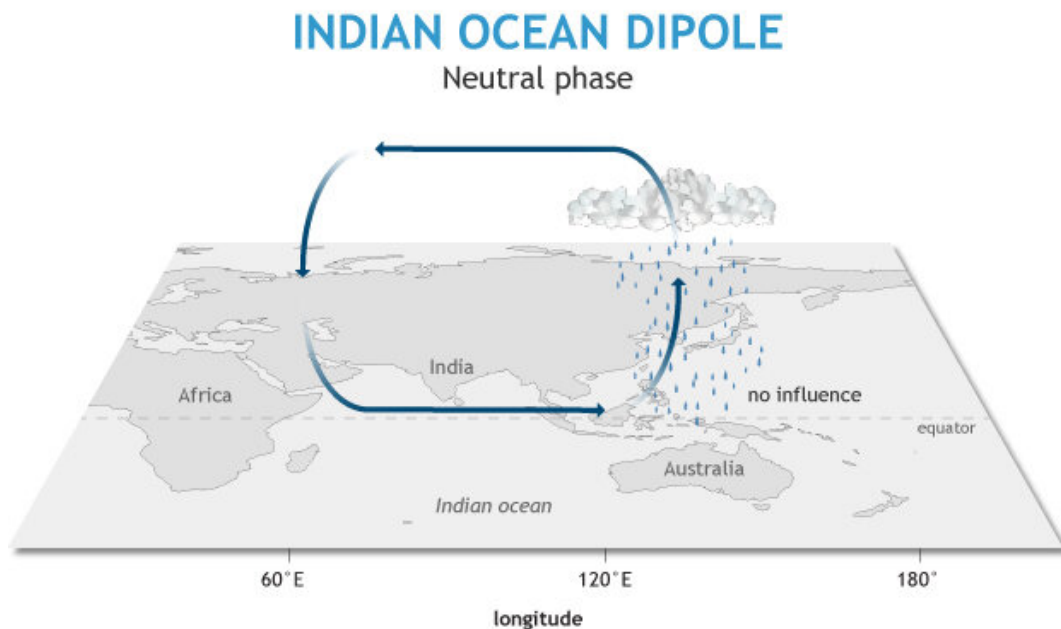
▪ IOD or Indian Nino:

- IOD, sometimes referred to as the **Indian Nino**, is similar to the **El Nino phenomenon**, occurring in the relatively smaller area of the Indian Ocean between the Indonesian and Malaysian coastline in the east and the African coastline near Somalia in the west.
 - The El Nino is the warmer-than-normal phase of the **El Nino Southern Oscillation (ENSO) phenomenon**, during which there are generally warmer temperatures and less rainfall than normal in many regions of the world, including India.
- One side of the ocean, along the equator, gets warmer than the other.
- IOD is said to be positive when the western side of the Indian Ocean, near the **Somalia coast, becomes warmer** than the eastern Indian Ocean.
- It is negative when the western Indian Ocean is cooler.

▪ Mechanism:

◦ Neutral Phase:

- The air circulation in the Indian Ocean basin moves from **west to east**, that is from the African coast towards the Indonesian islands, near the surface, and in the opposite direction at the upper levels. That means the surface waters in the Indian Ocean get pushed from west to east.
- In a normal year, warmer waters in the western Pacific near Indonesia cross over into the Indian Ocean and make **that part of the Indian Ocean slightly warmer**. That causes the air to rise and helps the prevailing air circulation.

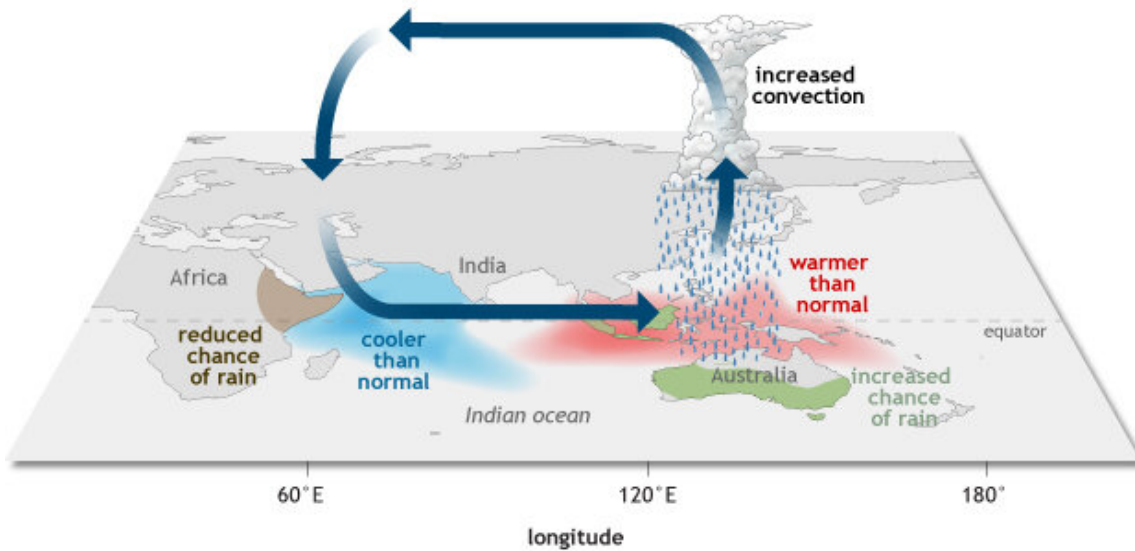


◦ Negative IOD:

- In the years when the air circulation becomes stronger, more warm surface waters from the African coast are pushed towards the Indonesian islands, making that region warmer than usual. This causes hotter air to rise, and the cycle reinforces itself.
- This is the state of negative IOD.

INDIAN OCEAN DIPOLE

Negative phase

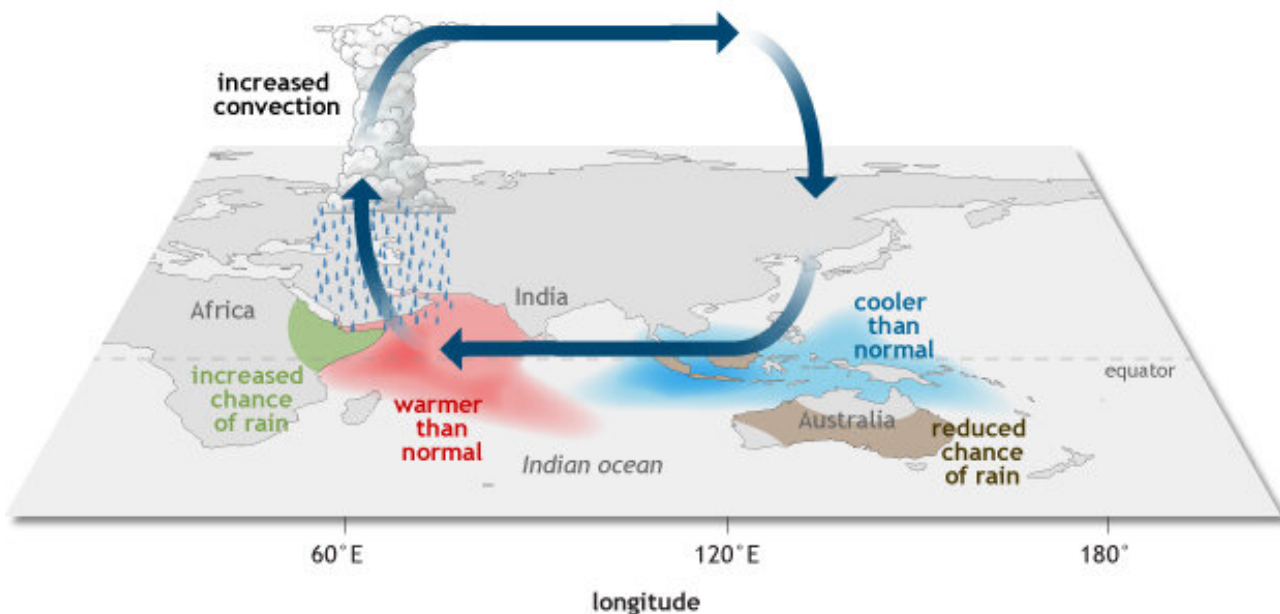


NOAA Climate.gov

- **Positive IOD:** Air circulation becomes slightly weaker than normal. In some rare cases, the air circulation even reverses direction. The consequence is that the African coast becomes warmer while the Indonesian coastline gets cooler.
 - A positive IOD event is often seen developing at times of an El Niño, while a negative IOD is sometimes associated with La Niña.
 - During El Niño, the Pacific side of Indonesia is cooler than normal because of which the Indian Ocean side also gets cooler. That helps the development of a positive IOD.

INDIAN OCEAN DIPOLE

Positive phase



NOAA Climate.gov

▪ Impact of IOD:

- In the Indian Ocean, IOD exhibits an ocean-atmosphere interaction that closely resembles the fluctuations observed during El Niño events in the **Pacific Ocean**. However, the IOD is considerably less powerful compared to El Niño, resulting in relatively minimal impacts.
- A positive IOD helps rainfall along the African coastline and also over the Indian sub-continent while suppressing rainfall over Indonesia, southeast Asia and Australia. The impacts are opposite during a negative IOD event.

What are the Key Facts About Somalia?

▪ Location:

- Somalia is situated in the **Horn of Africa**, bordered by the **Gulf of Aden** to the north, the Indian Ocean to the east, Kenya and Ethiopia to the west, and Djibouti to the northwest.

▪ Capital:

- Mogadishu is the capital and largest city in Somalia.

▪ Terrain:

- The country features **diverse landscapes including arid plains**, plateaus, highlands, and mountain ranges.
- The northern part of Somalia includes the Golis Mountains, while the southern region is characterized by savannas and grasslands.

▪ Climate:

- Somalia experiences a **predominantly arid to semi-arid climate with hot temperatures** and limited rainfall. The coastal areas have a more moderate climate due to the influence of the Indian Ocean.

▪ Islands:

- Somalia has several islands off its coast, including the Bajuni Islands and the Socotra Archipelago, which includes islands like Socotra, Abd al Kuri, and Samha. However, the Socotra Archipelago is administered by Yemen.



UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. With reference to 'Indian Ocean Dipole (IOD)' sometimes mentioned in the news while forecasting Indian monsoon, which of the following statements is/are correct? (2017)

1. IOD phenomenon is characterised by a difference in sea surface temperature between tropical Western Indian Ocean and tropical Eastern Pacific Ocean.
2. An IOD phenomenon can influence an El Nino's impact on the monsoon.

Select the correct answer using the code given below:

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

Ans: (b)

Mains

Q. Most of the unusual climatic happenings are explained as an outcome of the El-Nino effect. Do you agree? (2014)

Asia-Pacific Economic Cooperation Leaders' Summit 2023

[Source: IE](#)

Why in News?

Recently, the [Asia-Pacific Economic Cooperation \(APEC\) Leaders' Summit 2023](#) took place in **San Francisco, United States**.

What are the Key Highlights of the APEC Leaders' Summit 2023?

- The APEC 2023 summit's theme is "**Creating a Resilient and Sustainable Future for All**".
- APEC reaffirmed their commitment to free, fair, and open trade and investment, and to advancing inclusive and sustainable growth in the region.
- The summit concluded with the adoption of the **Golden Gate Declaration**.
 - The declaration underscores the commitment to creating a resilient and sustainable future for all member economies.
- The APEC leaders endorsed the APEC Action Agenda on Climate Change and Energy Security, which outlined a set of concrete actions and targets to enhance cooperation and coordination on addressing the climate crisis and ensuring energy security.

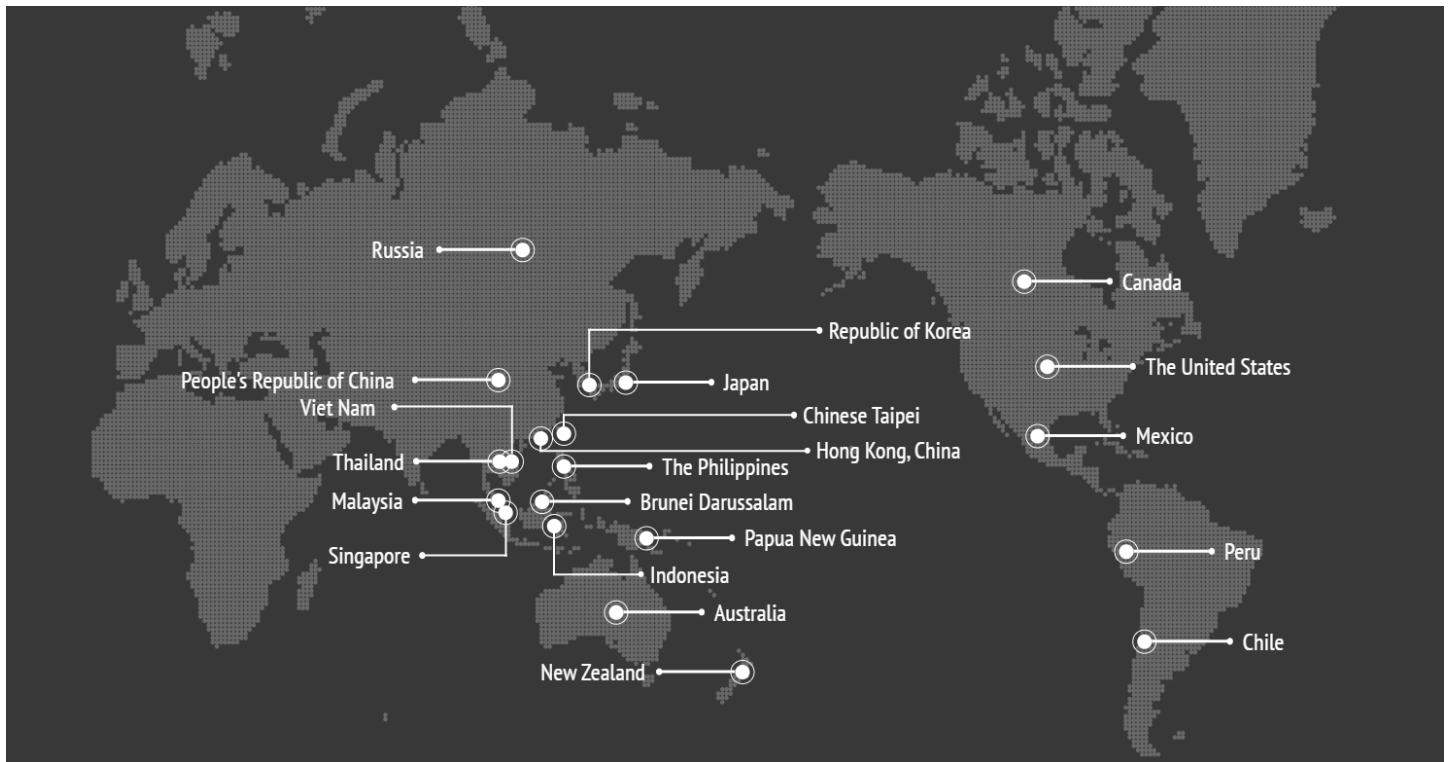
What is Asia-Pacific Economic Cooperation?

- **About:**

- The APEC is a regional economic forum established in 1989 to leverage the **growing interdependence of the Asia-Pacific**.
- APEC aims to create greater prosperity for the people of the region by promoting **balanced, inclusive, sustainable, innovative and secure growth** and by accelerating regional economic integration.
- The APEC process is supported by a **permanent secretariat based in Singapore**.

▪ **Members:**

- Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Chinese Taipei, Thailand, Vietnam and the United States.
- **India currently has the 'observer' status.**



▪ **Significance:**

- APEC accounts for approximately **62% of world GDP** and **48% of world trade in 2021**.
 - It is one of the oldest and most influential multilateral platforms in the Asia-Pacific region.
- APEC operates based on **no binding commitments or treaty obligations**. Commitments are undertaken voluntarily and capacity-building projects help members implement APEC initiatives.
- APEC's main goals are to support economic growth and prosperity, enhance regional economic integration, strengthen human security, and address common challenges such as climate change, health, and food security.\

▪ **India- APEC:**

- India wanted to join APEC in 1991, it was the same year when **liberalisation** was introduced in the Indian economy which opened up its economy and trade more with other countries.
 - Some APEC members liked the idea of having India in the group. But some APEC members did not like the idea, because they thought **India still had too many rules and restrictions** that made it hard for them to do business with India.
- Another reason why India could not join APEC was that the **group decided to stop accepting new members in 1997**, to focus on improving the existing cooperation among the current members.
 - This decision was supposed to last until 2012, but it was not changed after that, so

India still could not join APEC.

UPSC Civil Services Examination, Previous Year Question

Prelims

Q1. Consider the following pairs: (2009)

Organization	Location of Headquarters
1. Asian Development Bank	Tokyo
2. Asia-Pacific Economic Cooperation	Singapore
3. Association of SouthEast Asian Nations	Bangkok

Which of the above pairs is/are correctly matched?

- (a) 1 and 2 only
- (b) 2 only
- (c) 2 and 3 only
- (d) 3 only

Ans: (b)

- The Asian Development Bank (ADB) is a regional development bank established on 19th December 1966. It has been conceived as a financial institution of Asian character to facilitate faster economic growth and cooperation in one of the poorest regions in the world. It consists of 68 members of which 49 are from within Asia Pacific and 19 outside. It is headquartered in the Ortigas Center located in the city of Mandaluyong, Metro Manila, Philippines. **Hence, pair 1 is not correctly matched.**
- The Asia-Pacific Economic Cooperation (APEC) is a regional economic forum established in 1989 to leverage the growing interdependence of the AsiaPacific. APEC's 21 members aim to create greater prosperity for the people of the region by promoting balanced, inclusive, sustainable, innovative and secure growth and by accelerating regional economic integration. The APEC has headquarters in Singapore and operates as the core support mechanism for the APEC process. It provides coordination, technical and advisory support as well as information management, communications and public outreach services. **Hence, pair 2 is correctly matched.**
- The Association of Southeast Asian Nations (ASEAN) is a regional inter-governmental organization comprising ten countries in Southeast Asia, which promotes inter-governmental cooperation and facilitates economic, political, security, military, educational, and socio-cultural integration among its members and other countries in Asia. It is headquartered in Jakarta, Indonesia. **Hence, pair 3 is not correctly matched.**
- **Therefore, option (b) is the correct answer.**

Q2. India is a member of which among the following? (2015)

1. Asia-Pacific Economic Cooperation
2. Association of South-East Asian Nations
3. East Asia Summit

Select the correct answer using the code given below:

- (a) 1 and 2 only

(b) 3 only

(c) 1, 2 and 3

(d) India is a member of none of them

Ans: (b)

Frictions in Centre-State Relations

For Prelims: Impact of Frictions in [Centre-State Relations](#), [Cooperative Federalism](#), [Schedule VII of the constitution](#), [Economic Reforms](#), [National Pension System \(NPS\)](#), [PM Gati Shakti](#).

For Mains: Impact of Frictions in Centre-State Relations, Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

[Source: TH](#)

Why in News?

In recent years, the frequency and intensity of disputes between the Centre and States have increased, weakening the Pillars of [Cooperative Federalism](#) and also have implications on the Indian Economy.

Note: In Cooperative federalism, the **Centre and states share a horizontal relationship**, where they **“cooperate” in the larger public interest**.

- It is an important tool to enable **states’ participation in the formulation** and implementation of national policies.
- Union and the states are constitutionally obliged to cooperate with each other on the matters specified in [Schedule VII of the constitution](#).

What are the Issues of Centre-State Relations?

- **Background:**
 - Continuing [Economic Reforms](#) since 1991 has led to the **relaxation of many controls on investments**, giving some room to States, but the autonomy regarding public expenditure policies is not **absolute as State governments depend on the Centre** for their revenue receipts.
 - Several States have recently pushed back as a result of which the ‘give and take’ equation between the Centre and the States has given **way to a more hardened stand by both**, leaving little room to negotiate.
 - The increasingly fractious Centre-State ties have **chipped away at the edifice of Cooperative Federalism**.
- **Complexities of Contemporary Disputes:**
 - The areas of contention include the **homogenisation of social sector policies**, functioning of regulatory institutions and the powers of central agencies.

- Ideally bulk of the policies in these spheres should be at the discretion of States, with an apex central body overseeing the process of resource allocation.
- However, the **apex bodies have often attempted to increase their influence and push States** in directions that are amenable to the Centre.

What are the Constitutional Provisions Related to Centre-State Relations in India?

▪ Legislative Relations:

- **Articles 245 to 255 in Part XI of the Constitution** deal with the legislative relations between the Centre and the states.
 - Given the federal nature of the Indian Constitution, it divides the legislative powers between the Centre and the states with respect to both the territory and the subjects of legislation.
- Distribution of **Legislative Subjects (Article 246)**: Indian Constitution provides for a division of the subjects between the Centre and the states through three **lists - List-I (Union), List-II (State) and List-III (Concurrent)** in the Seventh Schedule.
- **Parliament Legislation in State Field (Article 249)**: In abnormal times, the scheme of distribution is either modified or suspended.

▪ Administrative Relations (Article 256-263):

- Articles spanning from **256 to 263 in Part XI** of the Constitution deal with the administrative relations between the Centre and the states.

▪ Financial Relations (Article 256-291):

- Articles spanning from **268 to 293 in Part XII** of the Constitution deal with Centre – state financial relations.
 - Because India is a federal country, it adheres to the division of powers when it comes to taxation, and it is the responsibility of the Centre to allocate funds to the states.
- **Schedule VII** describes the ability of the **Centre and states to levy taxes**.
 - The [Goods and Services Tax](#), a dual structure tax, is a recent example of a financial centre-state relationship.

How Fiscal Federalism has been Compromised in Recent Times?

▪ Centre Dominance and Investment Shifts:

- The expanded scope of the Centre's activities can lead to a scenario where it **encroaches upon States' investment territory**.
 - For example, the Centre launched the PM Gati Shakti, where all States and UTs had to prepare and operationalise a State master plan in line with the national master plan for seamless implementation.
- However, the flexibility of States in formulating their master plan is **curtailed by the centralisation of planning** and implementation of the national master plan, leading to **underinvestment by States**.
 - Consequently, States witnessed a **decline in capital expenditure on roads and bridges**, falling to a meagre 0.58% of the gross state domestic product.

▪ Peculiar Fiscal Competition:

- While federal systems typically witness fiscal competition between regions/states, India has seen states engaging in competition not only amongst themselves **but also with the Centre**.
- This scenario arises **due to the Centre's augmented fiscal space**, granting it more spending power, while states **face limitations in raising non-tax revenues**.
 - Furthermore, **spending has become more concentrated** within the three largest States of **Uttar Pradesh, Maharashtra and Gujarat**, accounting for nearly half of the expenditure by 16 States between 2021-22 and 2023-24.
- This imbalance leads to **reduced financial autonomy for states** and skews welfare provisioning dynamics.

▪ Inefficiencies from Parallel Policies:

- Federal abrasions between the Centre and states have resulted in the emergence of 'parallel policies.'
 - For instance, the [National Pension System \(NPS\)](#) heralded a shift from a defined benefit scheme to a defined contribution scheme.
 - While most states initially adopted the NPS, some are reverting to the old pension scheme due to perceived fiscal implications.
- The lack of trust within the federal system drives states to duplicate policies, leading to **inefficiencies and long-term fiscal repercussions on the economy.**

How can Federalism be Strengthened in India?

▪ Collaborative Dialogue:

- Foster **open and transparent communication** between the Centre and states. Encourage regular meetings and discussions to address concerns and find common ground on issues affecting both.

▪ Empower States:

- Devolve **more decision-making powers and resources** to states while ensuring accountability. This can empower states to take charge of their development agenda without solely relying on the Centre.

▪ Cooperative Policies:

- Encourage cooperative policies where the **Centre and states work together to formulate and implement initiatives.** This collaboration can optimise resources and ensure comprehensive development.

▪ Clarity in Roles:

- **Define clear roles and responsibilities** for both levels of government to **reduce overlapping jurisdictions** and conflicts. This clarity can streamline operations and prevent policy duplications.

▪ Building Trust:

- Foster a culture of trust and cooperation through mutual respect and understanding. Establishing trust can facilitate smoother implementation of policies and reforms.

Conclusion

- A harmonious relationship between the Centre and states within a federal system is crucial for a conducive economic environment.
- Collaboration, empowerment, clarity, and trust-building are **essential components for fostering a cooperative and productive relationship.**

UPSC Civil Services Examination Previous Year's Question (PYQs)

Prelims

Q1. Which one of the following is not a feature of Indian federalism? (2017)

- (a) There is an independent judiciary in India.
- (b) Powers have been clearly divided between the Centre and the States.
- (c) The federating units have been given unequal representation in the Rajya Sabha.
- (d) It is the result of an agreement among the federating units.

Ans: (d)

Q2. Local self-government can be best explained as an exercise in (2017)

(a) Federalism

(b) Democratic decentralisation

(c) Administrative delegation

(d) Direct democracy

Ans: (b)

Mains

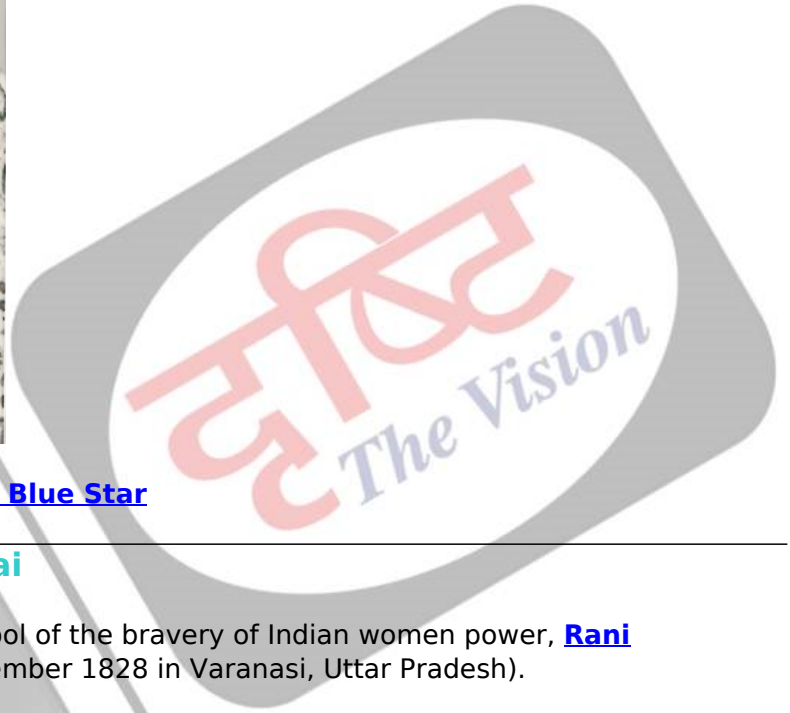
Q. Though the federal principle is dominant in our constitution and that principle is one of its basic features, but it is equally true that federalism under the Indian Constitution leans in favour of a strong Center, a feature that militates against the concept of strong federalism. Discuss. (2014)

Rapid Fire Current Affairs

Indira Gandhi Birth Anniversary

Recently, the Prime Minister has paid tributes to former **Prime Minister Indira Gandhi** on her birth anniversary (19th November 1917 in Allahabad, Uttar Pradesh).

- Indira Gandhi, also known as the **Iron Lady of India**, was the **third and the only female Prime Minister of India**, who served from 1966 to 1977 and from 1980 to 1984.
 - She was the daughter of **Jawaharlal Nehru**, the first Prime Minister of India.
- **She** led India to victory in the **1971 war against Pakistan**, which resulted in the **creation of Bangladesh**.
- She imposed a state of **emergency in 1975**, suspending civil liberties and democratic rights.
- She was assassinated in retaliation for the **Operation Blue Star**, a military action against the Sikh militants in the Golden Temple.
- She was awarded the **Bharat Ratna**, India's highest civilian honour, posthumously in 1984.



Read more: [Indo-Pak War: 1971, Operation Blue Star](#)

Birth Anniversary of Rani Lakshmbai

The Prime Minister has paid tributes to the symbol of the bravery of Indian women power, [Rani Lakshmbai](#) on her birth anniversary(19th November 1828 in Varanasi, Uttar Pradesh).

- Rani Lakshmbai, originally named Manikarnika was **one of the brave warriors of India's struggle for Independence** and the Queen of the **Maratha-ruled princely state of Jhansi.**
- She married **Maharaja Gangadhar Rao** at the age of 14, adopting the name Laxmbai. Her son died, and she later adopted **Damodar Rao.**
- In 1853, when the Maharaja of Jhansi died, Lord Dalhousie refused to acknowledge the child and **applied the [Doctrine of Lapse](#), and annexed the state.**
 - According to this, any princely state that was under the **direct or indirect control of the East India Company** where the ruler did not have a **legal male heir** would be annexed by the company.
- She was one of the **leading figures of the [Indian Revolt of 1857.](#)**
- Rani Lakshmbai **fought bravely against the British** to save her empire from annexation. She died fighting on the battlefield on **17th June 1858.**
- When the [Indian National Army](#) started its first female unit (in 1943), it was named after the **valiant queen of Jhansi.**



Read more: [Rani Lakshmi Bai](#)

AI-Driven Martian Oxygen: Revolutionizing Mars Missions

Researchers have devised a groundbreaking method using [AI-driven chemistry](#) to produce oxygen from Martian [meteorites](#).

- By converting **meteorites into compounds and creating catalysts**, this AI-chemist demonstrated a capacity to produce oxygen under simulated Martian conditions, marking a **crucial leap towards self-sustaining Martian exploration**.
- This innovative approach unlocks the potential for utilizing indigenous resources, steering future missions toward cost-effectiveness and reduced complexity.

Australia Wins ICC Men's Cricket World Cup 2023

In the final showdown of the Cricket World Cup 2023, **Australia clinched victory against India** by a **margin of six wickets** at the **Narendra Modi Stadium** situated in Ahmedabad.

- The match witnessed a remarkable performance by **Australia's Travis Head**, who secured a century.
- This triumph marked Australia's **sixth World Cup title**, establishing a new record as they had previously secured victories in **1987, 1999, 2003, 2007, and 2015** editions of the tournament.
 - India secured triumph in the World Cup twice, in **1983 and 2011**.

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