



## UNFCCC Conference of Parties (COP)

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# UNFCCC

Conference of Parties (COP)

- Supreme decision-making body of UNFCCC
- Meets in **Bonn**, the Secretariat (unless a Party offers to host the session)
- Meets every year (unless the Parties decide otherwise)
- First COP – held in **Berlin**, Germany (1995)

## COPs and Their Major Outcomes


### COP 3 (1997)

Kyoto, Japan  
Adopted **Kyoto Protocol** (legally bind developed countries to **reduce emission targets**)

### COP 7 (2001)

Marrakech, Morocco  
**Marrakech Accords** signed (set stage for **ratification of Kyoto Protocol**)

### COP 8 (2002)

New Delhi, India   
• **Delhi Declaration** (development needs of the poorest countries)  
• **Technology transfer** for climate change (CC) mitigation)

### COP 15 (2009)

Copenhagen, Denmark  
Developed countries pledged up to **\$30 billion in fast-start finance** (for 2010-12)

### COP 14 (2008)

Poznan, Poland  
• **Adaptation Fund under Kyoto Protocol** launched  
• **Poznan Strategic Programme on Technology Transfer**

### COP 13 (2007)

Bali, Indonesia  
**Bali Road Map and Bali action plan** (on shared vision, mitigation, adaptation, technology and financing)

### COP 16 (2010)

Cancun, Mexico  
• **Cancun Agreements** (assist developing nations in dealing with CC)  
• Established: **Green Climate Fund**

### COP 18 (2012)

Doha, Qatar  
**Doha Amendment to Kyoto Protocol** (reducing GHG emissions by 18% compared to 1990 levels)

### COP 19 (2013)

Warsaw, Poland  
• **Warsaw Framework for REDD Plus**  
• **Warsaw International Mechanism for Loss and Damage**

### COP 24 (2018)

Katowice, Poland  
**Rulebook for Paris Agreement** (actions to be taken as per NDCs)

### COP 21 (2015)

Paris, France  
• **Paris Agreement** (global temp. well below 2°C above pre-industrial times)  
• **Climate finance** by rich countries  
• **yearly \$100bn funding pledge** by rich countries)

### COP 26 (2021)

Glasgow, UK  
• India announced **Net Zero Targets 2070**  
• India called for **"phase-down" of coal-based power**  
• **Glasgow Breakthrough Agenda** (by 41 countries + India)

### COP 27 (2022)

Sharm-el-Sheikh, Egypt

- **Loss & Damage Fund**
- USD 3.1bn plan for **early warning systems**
- **G7-led 'Global Shield Financing Facility'** for countries suffering climate disasters
- **African Carbon Market Initiative**
- **Action for Water Adaptation and Resilience (AWARE)** initiative
- **Mangrove Alliance** (in partnership with India)
- **India's Long-Term Low Emission Development Strategy**



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## Severe Climate Disasters of 2022 and COP27

**For Prelims:** Climate Disasters, malaria, diarrhoea, cyclones, droughts, heat waves, lightning, floods, landslides

**For Mains:** Climate Change and its impact, Environmental Pollution & Degradation

### Why in News?

While the developing and vulnerable nations continue to demand climate finance at COP27, **it is important to realise that the lives have also been severely affected by global catastrophes, especially in the year 2022.**

### How have Past Global Catastrophes Devastated the Planet?

#### ▪ **Pakistan Floods:**

- Pakistan **recorded 62% less than normal rainfall in the month of March, 2022** and the warmest April preceding the monsoon season.
  - Glaciers melted as a result of these heat waves, which led rivers to swell. Access to basic necessities became difficult for 33 million people of Pakistan's 220 million population.
- Extreme rainfall further triggered the most devastating floods from June to September.
  - The flood was the worst in the country's recent history.
  - Over 1,500 people were killed, with millions being displaced and developing serious health issues such as skin infections, [malaria](#) and [diarrhoea](#).

#### ▪ **Hurricane Ian in the US:**

- NASA data revealed that **warm ocean waters in the Gulf of Mexico powered Hurricane Ian in the US towards the end of September, 2022** making it one of the strongest hurricanes to hit the country in recent memory.
  - It **resulted in the loss of 101 lives** and monetary losses of more than USD 100 billion.
  - The disaster was the costliest climate-induced disaster of the year.
- The **escalation brought severe floods**, relentless rains and strong winds to southwestern Florida.

#### ▪ **European Droughts**

- In June and July, 2022, **Europe was hit by two extreme heat waves**, which claimed approximately 16,000 lives.
  - This year's drought is likely to be the worst in 500 years.
- Water levels in Europe's biggest rivers - Rhine, Po, Loire, and Danube - shrunk, and dry conditions continue to prevail in different parts of the continent.

#### ▪ **Spain and Portugal:**

- An atmospheric high-pressure system, which causes dry air to descend over subtropical regions in the Northern Hemisphere during winter and spring seasons, called **Azores high**, has the ability to block wet weather outlets.
- This caused dry conditions in Iberian Peninsula in southwestern Europe, and the

Mediterranean region.

- Spain and Portugal hence faced the driest weather in 1,200 years, along with wildfires.

▪ **Natural Disasters in India:**

- India recorded **natural disasters almost every day in 2022.**
- India recorded **“extreme weather events on 241 of 273 days”** in the first nine months of the year.
  - Thunderstorms, persistent rains, [cyclones](#), [droughts](#), [heat waves](#), [lightning](#), [floods](#) and [landslides](#) occurred all throughout these months.
  - **Himachal Pradesh recorded the highest number of deaths** followed by Assam and Madhya Pradesh.
- Overall, these **disasters claimed about “2,755 lives, affected 1.8 million hectares (ha) of crop area,** destroyed over 416,667 houses and killed close to 70,000 livestock.”

## What are the Major Outcomes of the COP27?

▪ **“Loss and Damage” Fund for Vulnerable Countries:**

- The United Nations Climate Change Conference COP27 **signed an agreement to provide [“loss and damage” funding to vulnerable countries.](#)**

▪ **Technology:**

- At COP27, a **new five-year work program was launched to promote climate technology solutions** in developing countries.

▪ **Mitigation:**

- A mitigation work programme was **launched aimed at urgently scaling up mitigation ambition and implementation.**
- The **work programme will start immediately following COP27** and continue until 2030, with at least two global dialogues held each year.
- Governments were also **requested to revisit and strengthen the 2030 targets** in their national climate plans by the end of 2023, as well as accelerate efforts to phase down unabated coal power and phase-out inefficient fossil fuel subsidies.

▪ **Global Stocktake:**

- Delegates at the UN Climate Change Conference COP27 wrapped up the second technical dialogue of the first global stocktake, a mechanism to raise ambition under the [Paris Agreement.](#)
- Prior to the conclusion of the stocktake at COP28 next year, the UN Secretary-General will convene a 'climate ambition summit' in 2023.

▪ **Sharm-El-Sheikh Adaptation Agenda:**

- It outlines **30 Adaptation Outcomes to enhance resilience** for 4 billion people living in the most climate vulnerable communities by 2030.

▪ **Action on Water Adaptation and Resilience Initiative (AWARe):**

- It has been launched to reflect the importance of water as both a key climate change problem and a potential solution.

▪ **African Carbon Market Initiative (ACMI):**

- It was launched to support the growth of carbon credit production and create jobs in Africa.

▪ **The Global Renewables Alliance:**

- It brings together, for the first time, **all the technologies required for the energy transition in order to ensure an accelerated energy transition.**
- As well as ensuring targets are met, the Alliance also aims to position renewable energy as a pillar of sustainable development and economic growth.

[Source: TH](#)

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# Development of Great Nicobar

**For Prelims:** Great Nicobar Islands, Bay of Bengal, Indo-Pacific, Zoological Survey of India, Coral Reef.

**For mains:** Development of Great Nicobar and its Significance.

## Why in News?

Recently, the Ministry of Environment, Forest and Climate Change has given environmental clearance for the ambitious **Rs 72,000 crore development project** on the strategically important [Great Nicobar Island](#).

- The project is to be implemented in **three phases over the next 30 years**.

## What is the Proposal?

- A greenfield city has been proposed, including an **International Container Trans-shipment Terminal (ICTT)**, a greenfield international airport, and a power plant.
- The port will be controlled by the **Indian Navy**, while the airport will have dual **military-civilian functions** and will cater to tourism as well.
- A total 166.1 sq km along the southeastern and southern coasts of the island have been **identified for project along a coastal strip** of width between 2 km and 4 km.
- Some 130 sq km of forests have been **sanctioned for diversion**, and 9.64 lakh trees are likely to be felled.

## What is the Purpose of Developing this Island?

- **Economic Reasons:**
  - Great Nicobar is **equidistant from Colombo to the southwest and Port Klang** and Singapore to the southeast, and positioned close to the East-West international shipping corridor, through which a very large part of the world's shipping trade passes.
  - The proposed ICTT can potentially become **a hub for cargo ships traveling on this route**.
  - As per the NITI Aayog report, the proposed port will allow **Great Nicobar to participate in the regional and global maritime economy** by becoming a major player in cargo transshipment.
- **Strategic Reasons:**
  - The proposal to develop Great Nicobar was first floated in the 1970s, and its importance for **national security and consolidation of the Indian Ocean Region** has been **repeatedly underlined**.
  - Increasing Chinese assertion in the [Bay of Bengal](#) and the [Indo-Pacific](#) has added great urgency to this imperative in recent years.

## What are the Related Concerns?

- The proposed massive infrastructure development in an ecologically important and fragile region **has alarmed many environmentalists**.
- The loss of tree cover will not only affect the flora and fauna on the island, it will **also lead to increased runoff and sediment deposits** in the ocean, impacting the coral reefs in the area.
- Environmentalists have also flagged the **loss of mangroves on the island as a result of the development project**.

## What are the Government's steps to address the concerns?

- The [Zoological Survey of India](#) is currently in the process of assessing how much of the reef will

have to be relocated for the project.

- India has successfully translocated a **coral reef** from the **Gulf of Mannar** to the **Gulf of Kutch** earlier.
- A conservation plan for the leatherback turtle is also being put in place.
- As per the government, the project site is outside the **eco-sensitive zones of Campbell Bay and Galathea National Park**.

## What are the Key Points of the Great Nicobar Islands?

### ▪ About:

- Great Nicobar, the southernmost of the **Andaman and Nicobar Islands**, has an area of 910 sq km.
  - The Andaman and Nicobar Islands are **a cluster of about 836 islands in the eastern Bay of Bengal**, the two groups of which are separated by the 150-km wide **Ten Degree Channel**.
  - The Andaman Islands lie to the **north of the channel, and the Nicobar Islands to the south**.
- Indira Point on the southern **tip of Great Nicobar Island is India's southernmost point**, less than 150 km from the northernmost island of the Indonesian archipelago.
- It covers 1,03,870 hectares of unique and threatened tropical evergreen forest ecosystems.
- It is home to a very rich ecosystem, including 650 species of angiosperms, ferns, gymnosperms, bryophytes, among others.
- In terms of fauna, there are over 1800 species, some of which are endemic to this area.

### ▪ Ecological Characteristics:

- The Great Nicobar Biosphere Reserve harbours a wide spectrum of ecosystems comprising tropical wet evergreen forests, mountain ranges reaching a height of 642 m (Mt. Thullier) above sea level, and coastal plains.
- Great Nicobar is home to **two national parks, a biosphere reserve**
  - **National Parks:** Campbell Bay National Park and Galathea National Park
  - **Biosphere Reserve:** Great Nicobar Biosphere Reserve.

### ▪ Tribe:

- The **Mongoloid Shompen Tribe**, about 200 in number, live in the forests of the biosphere reserve particularly along the rivers and streams.
- Another Mongoloid Tribe, **Nicobarese**, about 300 in number, used to live in settlements along the west coast.
  - After the tsunami in 2004, which devastated their settlement on the western coast, they were relocated to Afra Bay in the North Coast and Campbell Bay.



## UPSC Civil Services Examination, Previous Year Question (PYQ)

Q1. Which of the following have coral reefs? (2014)

1. Andaman and Nicobar Islands
2. Gulf of Kachchh
3. Gulf of Mannar
4. Sunderbans

**Select the correct answer using the code given below:**

- (a) 1, 2 and 3 only  
(b) 2 and 4 only  
(c) 1 and 3 only  
(d) 1, 2, 3 and 4

**Ans: (a)**

**Q2. Consider the following statements: (2018)**

1. The Barren Island volcano is an active volcano located in the Indian territory.
2. Barren Island lies about 140 km east of Great Nicobar.
3. The last time the Barren Island volcano erupted was in 1991 and it has remained inactive since then.

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

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

**Ans: (a)**

**Q3. Which one of the following pairs of islands is separated from each other by the 'Ten Degree Channel'? (2014)**

- (a) Andaman and Nicobar  
(b) Nicobar and Sumatra  
(c) Maldives and Lakshadweep  
(d) Sumatra and Java

**Ans: (a)**

[Source: IE](#)

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## **National Suicide Prevention Strategy**

**For Prelims:** Status of Suicides in India, National Crime Records Bureau, Accidental Deaths & Suicides in India Report

**For Mains:** National Suicide Prevention Strategy, Status of Suicides in India, National Crime Records Bureau, Accidental Deaths & Suicides in India Report

## Why in News?

Recently, the Ministry of Health and Family Welfare, Government of India has announced the “**National Suicide Prevention Strategy**”.

- It is the **first of its kind in the country**, with time-bound action plans and multi-sectoral collaborations to achieve **reduction in suicide mortality by 10% by 2030**.
- The strategy is in line with the [World Health Organisation’s South East-Asia Region Strategy for suicide prevention](#).

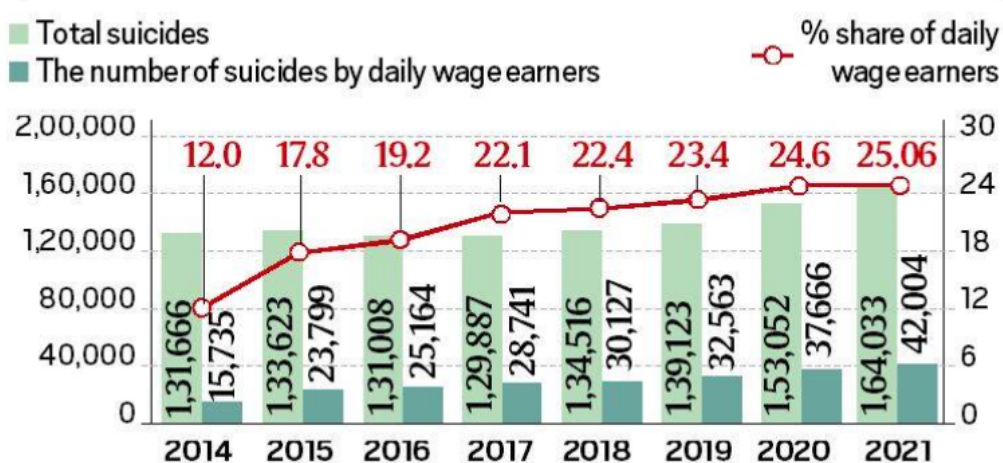
## What is National Suicide Prevention Strategy?

- The strategy broadly seeks to **establish effective surveillance mechanisms** for suicide within the next three years.
- It seeks to establish **psychiatric outpatient departments** that will provide **suicide prevention services** through the **District Mental Health Programme** in all districts within the next five years.
- It also aims to **integrate a mental well-being curriculum** in all educational institutions within the next eight years.
- It envisages **developing guidelines for responsible media reporting** of suicides, and restricting access to means of suicide.

## What is the Status of Suicides in India?

- **National Figures:**
  - In India, **more than one lakh lives** are lost every year to suicide, and it is the top killer in the 15-29 years category.
  - From 2019-22, the suicide rate has increased from **10.2 to 11.3 per 1,00,000 population**.
- [National Crime Records Bureau \(NCRB\)](#) has recently released report of “[Accidental Deaths & Suicides in India Report 2021](#)”. It provides the category wise records as follows:
  - **Daily Wager:**

### RISING SUICIDE RATE OF DAILY WAGE WORKERS



- Daily wage earners remained the largest profession-wise group among suicide victims in 2021, **accounting for 42,004 suicides (25.6%)**.
- The share of daily wagers death by suicide has **crossed the quarter mark for the first time**.
- At the national level, the number of suicides **increased by 7.17% from the years 2020 to 2021**.
  - However, the number of suicides in the daily wage group rose by 11.52%



during this period.

- **Farming Sector:**
  - The overall share of “**Persons engaged in farming sector**” among the total recorded suicides stood at 6.6% during 2021.

- **Profession Wise Distribution:**

Professioncategory	2020	2021	% Share in total Suicides in 2021	% Increase in suicides during 2021
Daily Wage Earner	37666	42004	25.6	11.52
Other Persons	20543	23547	14.4	14.62
House wife	22374	23179	14.1	3.60
Self Employed Persons	17332	20231	12.3	16.73
Professional/Salaried Persons	14825	15870	9.7	7.05
Unemployed Persons	15652	13714	8.4	-12.38
Students	12526	13089	8	4.49
Persons Engaged in Farming Sector	10677	10881	6.6	1.91
Retired Persons	1457	1518	0.9	4.19
Total	153052	164033	100	7.17

- The highest increase of 16.73% was recorded by “**self-employed persons**”.
- The “**unemployed persons**” group was the only one that saw a decline in suicides, with the number dipping by 12.38% from 15,652 in 2020 to 13,714 suicides in 2021.

- **Reasons for Suicide:**

- 33.2%: Family Problems (other than marriage related problems)
- 4.8%: Marriage Related Problems
- 18.6%: Illness

- **State:**

- **Maharashtra topped the country** in terms of the number of suicides reported in 2021 followed by **Tamil Nadu and Madhya Pradesh**.
- Maharashtra contributed 13.5% to the total number of suicides registered across the country in 2021.

- **Union Territories:**

- **Delhi** recorded the highest number of 2,840 suicides.

## What are India’s Initiatives to Reduce Suicides?

- **Mental Healthcare Act, 2017:**

- **MHA 2017** aims to provide mental healthcare services for persons with mental illness.

- **KIRAN:**

- The Ministry of Social Justice and Empowerment has launched a 24/7 toll-free helpline “**KIRAN**” to provide support to people facing anxiety, stress, depression, suicidal thoughts and other mental health concerns.

- **Manodarpan Initiative:**

- **Manodarpan** is an initiative of the Ministry of Education under Atmanirbhar Bharat Abhiyan. It is aimed to provide psychosocial support to students, family members and teachers for their mental health and well-being during the times of Covid-19.

## What is the National Crime Records Bureau?

- NCRB, headquartered in New Delhi, was set-up in 1986 under the **Ministry of Home Affairs** to function as a **repository of information on crime and criminals** so as to assist the investigators in linking crime to the perpetrators.
- It was set up based on the recommendations of the **National Police Commission (1977-1981)** and the MHA’s Task Force (1985).
- NCRB brings out the **annual comprehensive statistics of crime across the country** (‘Crime in India’ report).
  - Having been published since 1953, the report serves as a crucial tool in understanding the law and order situation across the country.

## Operation of Quasi-judicial Courts

**For Prelims:** Quasi-judicial Bodies in India

**For Mains:** Quasi-judicial Bodies in India, Role of Quasi-judicial Bodies & Measures for Better Operation

### Why in News?

The most critical issue faced by **Quasi-judicial Courts** is the **lack of adequate supervision** and **ownership** by the administrative and political leadership.

- Data on the level of pendency or the speed of disposal is not compiled in many states.

### What is a Quasi-judicial Body?

#### ▪ About:

- A **quasi-judicial body** is “an organ of Government **other than a Court or Legislature**, which affects the **rights of private parties** either through adjudication or rulemaking”.
- It is **not mandatory** that a Quasi-Judicial Body has to necessarily be an organisation **resembling a Court of Law**.
  - For example, the [Election Commission of India](#) is also a Quasi-Judicial Body but **does not have its core functions as a Court of Law**.
- **Some examples of Quasi-Judicial Bodies in India are:**
  - [National Green Tribunal](#)
  - [Central Information Commission \(CIC\)](#)
  - [Lok Adalat](#)
  - [Finance Commission](#)
  - [National Consumer Disputes Redressal Commission](#)
  - [Income Tax Appellate Tribunal](#)
  - [Railway Claims Tribunal](#)

#### ▪ Role in Governance:

- In the **conventional judicial process**, a large section of the populace for the fear of expenditure may hesitate from approaching the Courts, thus defeating the purpose of justice.
  - **Quasi-judicial bodies**, on the other hand, have an **overall low-cost** which **encourages people to seek redressal for their grievances**.
- Tribunals and other such bodies **do not follow any lengthy or complex procedure** for submitting application or evidence etc.
- Quasi-judicial bodies, while taking up specific matters, **majorly help by sharing the massive workload of the Judiciary**.
  - Like the **National Green Tribunal** adjudicating the matters related to environment and **pollution**.
- Quasi-judicial bodies are accessible, free from technicalities, expeditious and proceed more rapidly and efficiently as manned by experts.

#### ▪ Challenges:

- Data on the **level of pendency or the speed of disposal** is not compiled in many states.
- There is a class of quasi-judicial agencies that are not discussed in conversations on the pendency of cases.
  - These are generally **handled by the revenue authorities** and largely relate to

**land, tenancy, excise, arms, mining, or preventive functions** under the [Criminal Procedure Code](#). Usually, many of these offices are understaffed.

- Their engagement with duties such as law and order, protocol, coordination and other administrative functions **leaves them with much less time for court work.**
- Their access to **court clerks and record keepers is limited.** Computers and video recorders are not available in many of these courts.
- Several of the presiding officers lack proper knowledge of law and procedures, which has landed many civil servants in deep trouble in sensitive matters such as those related to arms licenses.

## What Measures can be taken to Improve Quasi-judicial Courts?

- The government should make the **efficient functioning of these agencies a priority** and clearly articulate **its position on the issue.**
- **Detailed data** on the functioning of these agencies must be collected and published from time to time, at least annually.
  - These should be **laid before the concerned legislatures.**
  - These results should be the **basis of decisions regarding the rationalising of staff strength.**
- An **electronic platform** should be established to handle all ancillary work related to the administration of justice, such as filing of complaints, issue of summons, movement of case records between courts, issuing copies of the judgments and so on.
  - It could establish a sound basis for analysing the functioning of these bodies and facilitate the publication of statistics.
- **Annual inspections of the subordinate courts** should be made mandatory.
  - This should be an important indicator for assessment by the superior authority. The inspections could become the basis of customised training of presiding officers.
- **Interdisciplinary research on the functioning of these courts** should be encouraged.
  - This would identify the areas of improvement such as legal reforms or issue of clear guidelines.
- Regular **training and orientation** of the adjudicating authorities should be taken up from time to time.
- The **state index of performance of these quasi-judicial courts** be made and published.
  - It would draw the attention of the states to their performance in comparison to others and help them identify areas of weakness.
- Important decisions, guidelines and directions **could be compiled and published on the portal of the apex adjudicating** forum such as the Board of Revenue.
  - These would be helpful to lower-level agencies.
- More **rigorous induction training of officials** handling judicial work would be helpful.
  - The importance of judicial work should be instilled among the trainees and the skill and confidence in handling them should be developed.
- **Procedural reforms** such as minimising adjournments, mandatory filing of written arguments and other such reforms proposed by bodies like the Law Commission for reform of the Civil Procedure Code should be adopted by these adjudicating bodies.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

**Q.** “The Central Administrative Tribunal which was established for redressal of grievances and complaints by or against central government employees, nowadays is exercising its powers as an independent judicial authority.” Explain. (2019)

**Source:** [IE](#)

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# Increasing Demand of Coal

**For Prelims:** Fossil fuel, Coal.

**For Mains:** Reasons for surging Coal Demand in India and related concerns.

## Why in News?

Despite the country's efforts to switch to renewable energy, **coal will remain India's dominant energy source.**

## What is the State of Energy Capacity of the Country?

- According to the projections by Climate Action Tracker, fossil fuel makes up for over half the installed energy capacity in the country and is expected to touch around 266 gigawatts by 2029-2030.
- **Domestic coal requirement is expected to rise to 1,018.2 million tonnes by 2031-32** from 678 MT in 2021-2022.
  - This means **coal consumption will increase 40% in India.**

## What is the Reason for Increasing Coal Demand?

- Iron and steel production uses coal and there are not **many technologies to replace the fuel immediately.**
- **Continued expansion of India's economy is expected during 2022-2024**, with annual average GDP growth of 7.4%, fuelled partially by coal.
- India's push to domestic coal mining through both Coal India and auction of coal blocks to private companies, coal usage in India will increase as it **plateaus in other parts of the world, including China.**
- The central government has opened **up coal mining for the private sector, claiming it as one of its most ambitious coal sector reforms.**
  - The government anticipates that it will bring efficiency and competition in coal production, attract investments and best-in-class technology, and help create more jobs in the coal sector.

## What is Coal?

- **About:**
  - It is a type of fossil fuel found in the form of sedimentary rocks and is often known as **'Black Gold'**.
  - It is a conventional source of energy and is widely available. It is used as a domestic fuel, in industries such as iron and steel, steam engines and to generate electricity. Electricity from coal is called thermal power.
  - The leading coal producers of the world include China, US, Australia, Indonesia, India.
- **Distribution of Coal in India:**
  - **Gondwana Coal Fields (250 million years old):**
    - **Gondwana coal makes up to 98 % of the total reserves** and 99 % of the production of coal in India.
    - Gondwana coal forms India's metallurgical grade as well as superior quality coal.
    - It is found in Damodar (Jharkhand-West Bengal), Mahanadi (Chhattisgarh-Odisha), Godavari (Maharashtra), and Narmada valleys.
  - **Tertiary Coal Fields (15 - 60 million years old):**

- Carbon content is very low but is rich in moisture and Sulphur.
- Tertiary coalfields are mainly confined to extra-peninsular regions
- Important areas include Assam, Meghalaya, Nagaland, Arunachal Pradesh, Jammu and Kashmir, Himalayan foothills of Darjeeling in West Bengal, Rajasthan, Uttar Pradesh, and Kerala.

▪ **Classification:**

- **Anthracite** (80 - 95% carbon content, found in small quantities in J&K).
- **Bituminous** (60 - 80% carbon content and is found in Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh).
- **Lignite** (40 to 55% carbon content, high moisture content and is found in Rajasthan, Lakhimpur (Assam) and Tamil Nadu).
- **Peat** (less than 40% carbon content and it is in the first stage of transformation from organic matter (wood) to coal).

## Way Forward

- A key step in **establishing a post-coal economy is re-training the coal-dependent society.**
- Recognising the **need to train the workers who have been displaced by their profession** is the **need of the hour for employment opportunities in the renewable energy sector.**
  - The American federal transition programmes like solar training and education for professionals and the Partnerships for Opportunity, Workforce and Economic Revitalisation dislocated worker grant can establish precedence for India to design and develop its own schemes.
- The **clean energy transitions for India could be financed by the development financing institutions**, with investments made by the Climate Change Finance Unit for the promotion of policies, green financing and capacity building.
  - The Climate Change Finance Unit is **responsible for serving as the Ministry of Finance's nodal point on climate finance matters**, participating in the discourse on climate finance issues within the multilateral climate change regime as well as other international forums such as the [G20](#) and providing analytical inputs to the **National Climate Policy Framework**.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### Prelims

#### Q1. Consider the following statements: (2019)

1. Coal sector was nationalized by the Government of India under Indira Gandhi.
2. Now, coal blocks are allocated on lottery basis.
3. Till recently, India imported coal to meet the shortages of domestic supply, but now India is self-sufficient in coal production.

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

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

Ans: (a)

Exp:

- Coal sector was nationalised in two phases under Indira Gandhi Government in 1972. **Hence, statement 1 is correct.**
- The coal blocks are allocated through auctions and not on a lottery basis. **Hence, statement 2 is not correct.**
- The coal sector is the monopolistic sector in India. India holds 5th biggest coal reserves in the

world, but due to the incapacity of coal production by monopolistic firms, it imports coal to meet the shortages of domestic supply. **Hence, statement 3 is not correct.**

- Therefore, option (a) is the correct answer.

## Q2. Which of the following is/are the characteristic/characteristics of Indian coal? (2013)

1. High ash content
2. Low sulphur content
3. Low ash fusion temperature

Select the correct answer using the codes given below:

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

Ans: (a)

## Mains

Q. Despite India being one of the countries of Gondwanaland, its mining industry contributes much less to its Gross Domestic Product (GDP) in percentage. Discuss. (2021)

Q. "In spite of adverse environmental impact, coal mining is still inevitable for development". Discuss. (2017)

[Source: DTE](#)

## Network Readiness Index 2022

### Why in News?

India has improved its position by six slots and is now placed at **61<sup>st</sup> rank as per the Network Readiness Index 2022 (NRI 2022)** report released recently.

### What is the Network Readiness Index 2022?

- **About:**
  - The Network Readiness Index (NRI) report maps the network readiness landscape of 131 economies based on their **performance in four areas:**
    - Technology, People, Governance, and Impact.
  - The report is prepared by the **Portulans Institute, an independent non-profit, nonpartisan research and educational institute** based in Washington DC.
  - This year's index includes **49 high-income economies, 32 upper-middle-income economies, 36 lower-middle-income economies, and 14 low-income economies.**
- **Global Rankings:**
  - **US has taken the 1<sup>st</sup> spot** from the **Netherlands (4<sup>th</sup>)** as the most network-ready society.
    - The biggest mover in the index is **Singapore (2<sup>nd</sup>)**, pushing **Denmark (6<sup>th</sup>)** and

- **Finland** (7<sup>th</sup>) out of the top 5.
  - The other five countries that made it to the Top 10 are - **Sweden** (3<sup>rd</sup>), **Switzerland** (5<sup>th</sup>), **Germany** (8<sup>th</sup>), **South Korea** (9<sup>th</sup>), and **Norway** (10<sup>th</sup>).
- Based on the top ten performers, NRI affirms that advanced economies in Europe, parts of Asia and the Pacific, and North America are **some of the world's most network-ready societies**.
- **India's Status:**
  - India has not only improved its ranking, but also improved its score **from 49.74 in 2021 to 51.19 in 2022**.
  - India **leads in several indicators:**
    - India secured **1<sup>st</sup> rank in "AI talent concentration"**.
    - **2<sup>nd</sup> rank** in "Mobile broadband internet traffic within the country" and "International Internet bandwidth".
    - **3<sup>rd</sup> rank** in "Annual investment in telecommunication services" and "Domestic market size"
    - **4<sup>th</sup> rank** in "ICT Services exports".
    - **5<sup>th</sup> rank** in "FTTH/Building Internet subscriptions" and "AI scientific publications".
  - As per the report, **India has a greater network readiness** than would be expected given its income level.
    - **India is ranked 3<sup>rd</sup> out of 36 in the group of lower-middle-income countries** after Ukraine and Indonesia.

## What are India's Related Initiatives?

- [National Broadband Mission](#)
- [National Digital Communications Policy, 2018.](#)
- [BharatNet](#)
- [Government's Digital India programme](#)
- [National AI Portal](#)

[Source: PIB](#)

## Olive Ridley Turtles

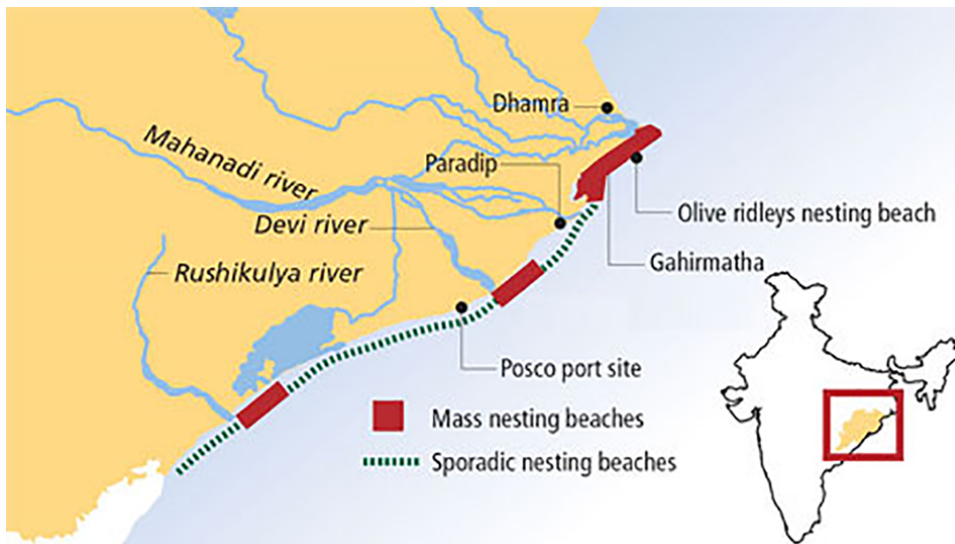
### Why in News?

Pairs of [Olive Ridley Sea turtles](#) have begun emerging on the sea waters off [Gahirmatha Marine Sanctuary](#) along the Odisha coast, marking the **commencement of the annual mass nesting of these endangered marine species**.

### What are Olive Ridley Turtles?

- **About:**
  - The Olive ridley turtles are the **smallest and most abundant of all sea turtles** found in the world.
  - These turtles are **carnivores** and get their name from their **olive-coloured carapace**.
  - They are best known for their **unique mass nesting called Arribada**, where thousands of females **come together on the same beach to lay eggs**.
- **Habitat:**
  - They are found in **warm waters of the Pacific, Atlantic and Indian oceans**.

- The **Odisha's Gahirmatha Marine Sanctuary** is known as the **world's largest rookery (colony of breeding animals) of sea turtles.**



#### ▪ **Protection Status:**

- **Wildlife Protection Act, 1972:** Schedule 1
- **IUCN Red List:** Vulnerable
- **CITES:** Appendix I

#### ▪ **Threats:**

- **Human Consumption:** They are extensively poached for their meat, shell and leather, and eggs.
- **Marine Pollution and Waste:** An ever-increasing debris of plastics, fishing nets, discarded nets, polythene and other garbage dumped by tourists and fishing workers threaten all sea turtles and degrades their habitats.
- **Fishing Trawlers:** Overexploitation of marine resources by use of trawlers often violates the rule to not fish 20 kilometers within a marine sanctuary.
  - There were injury marks on many dead turtles indicating they could have been trapped under trawls or gill nets.

#### ▪ **Initiatives to Protect Olive Ridley Turtles:**

- **Operation Olivia:**
  - Every year, the **Indian Coast Guard's "Operation Olivia"**, initiated in the early 1980s, helps **protect Olive Ridley turtles as they congregate along the Odisha coast** for breeding and nesting from November to December.
    - It also **intercepts unlawful trawling activities.**
- **Mandatory use of Turtle Excluder Devices (TEDs):**
  - To reduce **accidental killing in India**, the Odisha government has made it mandatory for trawls to use **Turtle Excluder Devices (TEDs), a net specially designed with an exit cover** which allows the turtles to escape while retaining the catch.
- **Tagging:**
  - The **tagging of the endangered Olive Ridley turtles** using non-corrosive metal tags is done to enable scientists to chart their movements and also know the areas they visit in order to protect the species and their habitats.

### **UPSC Civil Services Examination, Previous Year Question (PYQ)**

**Q. Which one of the following is the national aquatic animal of India? (2015)**

- (a) Saltwater crocodile
- (b) Olive ridley turtle
- (c) Gangetic dolphin



(d) Gharial

Ans: (c)

Exp:

- Ganges river Dolphin or Gangetic Dolphin is the National Aquatic Animal of India. The Ganges river dolphin was officially discovered in 1801. It inhabits parts of the Ganges, Meghna and Brahmaputra rivers in India, Nepal, Bhutan and Bangladesh, and the Karnaphuli River in Bangladesh.
- It is listed as endangered in IUCN Red List and has been included in the Schedule I of the Wildlife (Protection) Act, 1972.
- The main factors for decline in population of the species are poaching and habitat degradation due to declining flow, heavy siltation, construction of barrages causing physical barrier for this migratory species.
- **Therefore, option C is the correct answer.**

[Source: HT](#)

## Global Partnership on AI

### Why in News?

Recently, India has been handed over the presidency [Global Partnership on Artificial Intelligence \(GPAI\)](#) for 2022-23 by the outgoing Council Chair, France in its 3rd Annual Summit in Japan.

- This development comes on the heels of assuming the [Presidency of the G20](#), a league of the world's largest economies.

### What are the Highlights of the Annual GPAI summit?

- Tokyo is the first Asian city to host this summit.
- The meeting discussed these **four themes**:
  - Responsible AI,
  - Data governance,
  - Future of work,
  - Innovation and commercialisation.
- With National Programme on AI in place and a [National Data Governance Framework Policy \(NDGFP\)](#), India highlighted its commitment to efficient use of AI for catalyzing innovation ecosystem around AI.
  - The NDGFP aims to **ensure equitable access to non-personal data** and focus on improving the institutional framework for government data sharing, promoting principles around privacy and security by design, and encouraging the use of anonymization tool.

### What is GPAI?

- **About:**
  - It was launched in June, 2020, with fifteen members.
  - The Global Partnership in Artificial Intelligence is described as the **'fruition of an idea developed within the G7.'**
  - It is a **multi-stakeholder initiative on artificial intelligence (AI)**, which aims to fill

what it describes as **'the gap between theory and practice on AI,'** by supporting cutting-edge research, as well as applied activities, on AI-related priorities.

- The initiative facilitates **international cooperation on artificial technology** by bringing together on a single platform, experts from fields such as science, industry, civil society, governments, international bodies, and academia.

▪ **Members:**

- At present, GPAI has **twenty-five member states:**
  - Australia, Belgium, Brazil, Canada, Czech Republic, Denmark, France, Germany, India, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Poland, the Republic of Korea (South Korea), Singapore, Slovenia, Spain, Sweden, the United Kingdom, the United States, and the European Union (EU).
- The **founding members are:**
  - Australia, Canada, France, Germany, India, Italy, Japan, Mexico, New Zealand, the Republic of Korea, Singapore, Slovenia, the UK, the US, and the EU.

## What is Artificial Intelligence?

▪ **About:**

- It describes the action of machines accomplishing tasks that have historically required human intelligence.
- It includes technologies like machine learning, pattern recognition, big data, neural networks, self-algorithms etc.
- Example: Facebook's list of suggested friends for its users, self-driving cars, etc.
- AI automates processes and reduces human error but the principal limitation of AI is that it learns from the data. This means any inaccuracies in the data will be reflected in the results.

▪ **Expected Contribution to Indian Economy:**

- AI is expected to add USD 967 Billion to Indian economy by 2035 and USD 450-500 billion to India's GDP by 2025, accounting for 10% of the country's USD 5 trillion GDP target.

## What are the Initiatives Related to AI?

- [National AI Strategy](#)
- [MyGov Corona Helpdesk Chatbot](#)
- [RAISE 2020 - 'Responsible AI for Social Empowerment 2020](#)
- [Vaishwik Bhartiya Vaigyanik \(VAIBHAV\) Summit](#)

[Source: MINT](#)

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## Great Knot

### Why in News?

A Great knot has flown over 9,000 kilometers from Russia for a winter sojourn on Kerala's coast.

- The migratory bird that traversed the [Central Asian Flyway \(CAF\)](#) is only one of the two — the other has been sighted at Jamnagar in Gujarat.



## What are the Key Points about the Great knot?

- **Physical Appearance:**
  - A medium-sized bulky wader with a straight, dark-brown bill and yellowish-brown legs.
  - It has a striped crown with an indistinct white eyebrow. Its upperparts are grey, with dark feather tips, its underparts are white.
  - The rump is pure white, the tail is tipped with grey.
  - Breeding plumage consists of darker upperparts with black and chestnut markings.
- **Scientific Name:** *Calidris tenuirostris*
- **Protection Status:**
  - [IUCN Status:](#) **Endangered**
- **Distribution:**
  - This species breeds in **north-east Siberia, Russia, wintering mainly in Australia**, but also **throughout the coastline of South-East Asia** and on the coasts of India, Bangladesh, Pakistan, and the eastern coast of the Arabian Peninsula.
    - In India, it is found along the coastal regions of Gujarat and Andhra Pradesh.
  - The **Yellow Sea of North Korea, South Korea and China is a particularly important stop-over site** on migration in both spring and autumn.
- **Habitat and Ecology:**
  - Occurs within **sheltered, coastal habitats** containing large, intertidal mudflats or sandflats, including **inlets, bays, harbours, estuaries and lagoons**.
  - Often recorded on sandy beaches with mudflats nearby, sandy spits and islets and sometimes on exposed reefs or rock platforms.

## What is the Central Asian Flyway (CAF)?

- It is a migration route, **covering over 30 countries**, for different waterbirds linking their northernmost breeding grounds in **Russia** (Siberia) to the southernmost non-breeding (wintering) grounds in **West and South Asia**, the **Maldives** and **British Indian Ocean Territory**.
- CAF is among the **nine flyways in the world** and three of the nine flyways that pass through the Indian Subcontinent. The other two are:
  - **East Asian Australasian Flyway (EAAF) and Asian East African Flyway (AEAF)**.
- **India has a strategic role in the flyway**, as it **provides critical stopover sites to over 90% of the bird species** known to use this migratory route.
  - Flyways are the area used by a group of birds during their annual cycle which includes their breeding areas, stop over areas and wintering areas.

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