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MINISTRY OF SCIENCE AND TECHNOLOGY



MK Yadav Sir

Table of Contents

1. CEEW Study on Carbon Emission
2. Exercise KAZIND 2023
3. Hypertension
4. NISAR
5. UNGA Resolution
6. India as a Developed Country
7. DPDP Act 2023
8. Online Dispute Resolution
9. NTCA
10. Amazon River Basin

THE HINDU Page 12

CEEW STUDY ON CARBON EMISSIONS

(Syllabus: GS Paper 3 – Env and Eco)

Developed countries to overshoot carbon emissions goal, says study

Jacob Koshy
NEW DELHI

Developed countries – responsible for three-fourths of existing carbon emissions – will end up emitting 38% more carbon in 2030 than they have committed to, going by current trajectories, shows a study published last week by the Delhi-based think tank Council for Energy Environment and Water (CEEW).

The study, which comes ahead of the 28th Conference of Parties (COP-28) of the UN Framework Convention on Climate Change to be held in Dubai in November and December, shows that 83% of this overshoot will be caused by the U.S., Russia, and the European Union.

At COP-28, countries are expected to give an account of their Nationally Determined Contributions (NDCs), which are their commitments to the UN on emission cuts.

The CEEW study noted that the NDCs of developed countries already fall short of the global average reduction of emissions to 43% below 2019 levels that is needed to keep temperatures from rising above 1.5 degrees Celsius. Instead, developed countries' collective NDCs only amount to a 36% cut.

For a fighting chance at keeping warming below critical tipping points, decades of negotiations have obliged developed countries to lead global efforts to reduce greenhouse gas emissions with legally binding targets.

Collectively, developed countries were to reduce emissions by 5% from their 1990 levels between 2008 and 2012, and by 18% during 2013 to 2020. Several countries have committed to achieving net zero carbon emissions by 2050. Doing so would require steady measurable cuts every decade until that year. As an intermediate objective, countries presented data to the UN on their projected cuts until 2030. To keep temperatures below 1.5 degrees Celsius, developed countries need to cut emissions to 43% below their 2019 level. However, the CEEW study found that based on their current emissions trajectories, their cuts would likely amount to only 11% by 2030.

Except for two countries – Belarus and Norway – none of the developed countries seem to be on the path to meet their 2030 targets, though Japan and Kazakhstan are close, and are expected to miss their targets by only a single percentage point.

Missing targets

Developed countries are projected to emit 38% more carbon in 2030 than they have committed to

Party	2030 NDC target	Projected 2030 reduction
U.S.	50%	22%
Russia	70%	48%
Japan	46%	45%
U.K. and Northern Ireland	68%	56%
Canada	40%	30%
EU	55%	44%
Norway	55%	57%
Kazakhstan	15%	14%

■ Japan and Kazakhstan are set to miss their target by one percentage point



Context: Recent analysis reveals that in the lead-up to a **crucial global climate summit, developed countries**, accounting for **three-fourths of existing carbon emissions** in the atmosphere, are on track to emit 38% more carbon in 2030 than their current commitments.

- Surprisingly, a **significant 83% of this overshoot can be attributed** to the United States, Russia, and the European Union, **as per a study published last week** by the Council for Energy Environment and Water (CEEW), a Delhi-based think tank.

Key Points of Study

- At COP28, countries are expected to give an account of their Nationally Determined Contributions (NDCs), which are their **commitments to the UN on emission cuts**.
- The **CEEW study noted that** the NDCs of developed countries already fall short of the **global average reduction of emissions to 43% below 2019** levels that is needed to keep **temperatures from rising above 1.5 degrees Celsius.**
- **Several countries** have committed to **achieving net zero carbon emissions by 2050.**
- Except for two countries — **Belarus and Norway** -- none of the developed countries seem to be on the path to **meet their 2030 targets,** though **Japan and Kazakhstan** are close, and are **expected to miss their targets.**

Carbon Dioxide Emission

- **About**: CO2 is a greenhouse gas that is released into the atmosphere when fossil fuels are burned, such as coal, oil, and natural gas.
  - CO2 emissions are the primary cause of climate change.
- **Sources of CO2 emissions**: Electricity generation, Transportation, Industry, Agriculture, Forestry etc.
- **CO2 emissions can be reduced by**: Using renewable energy sources, Improving energy efficiency, Switching to electric vehicles, Reducing deforestation, Planting trees, carbon capture and storage.

PIB

Oct 29

EXERCISE KAZIND 2023

(Syllabus: GS Paper 2 – International Relations)

Indian Army and Air Force Contingent Departs for India-Kazakhstan Joint Military Exercise KAZIND-2023

Context: The Indian Army and Indian Air Force contingent, **comprising 120 personnel, recently departed for Kazakhstan** to participate in the 7th edition of Joint Military 'Exercise KAZIND-2023'.

Exercise KAZIND-2023

- **About**: The Joint Exercise between India and Kazakhstan was instituted as **'Exercise PRABAL DOSTYK'** in the year 2016.
- After the second edition, the **Exercise was upgraded to a company-level exercise** and **renamed as 'Exercise KAZIND**'.
- The Exercise has been **further upgraded as a Bi-service Exercise** this year by including the Air Force component.
- **Aim**: In this Exercise, **both sides will practice conduct of Counter Terrorism operations** in a sub-conventional environment under United Nations mandate.
- The scope of the Exercise **also includes conduct of Counter Unmanned Aerial System** Operations.
- **2023 Edition**: Otar in Kazakhstan
- **2022 Edition**: Umroi (Meghalaya).

Other Indian Army Exercise

- India and France - **SHAKTI**
- India and Australia - **AUSTRA HIND**
- India and China - **HAND IN HAND**
- India and Kyrgyzstan - **KHANJAR**
- India and Maldives - **EKUVERIN**

Other Indian Air Force Exercises

- India and Thailand - **SIAM BHARAT**
- India and Russia - **INDRA**
- India and France - **GARUDA**

INDIAN EXPRESS Page 12

HYPERTENSION

(Syllabus: GS Paper 2 – HEALTH)

India's first dist-level study on hypertension flags disparities in care

ANKITA UPADHYAY
NEW DELHI, OCTOBER 29

■ In Karnataka, four districts — Chikmagalur, Shimoga, Udupi and Chitradurga — have a similar prevalence of hypertension, but the proportion of participants diagnosed and treated in Chikmagalur and Udupi was higher.
■ In Meghalaya, the five districts of Garo Hills, the two districts of Jaintia Hills and the three districts of Khasi Hills all have a similar prevalence of hypertension, but the proportion of those diagnosed is much lower in Garo Hills than in Jaintia Hills and Khasi Hills.

These are among the key findings of an exhaustive study that has, for the first time, mapped and assessed the variation in hypertension care at the district level in India, highlighting the urgent need for a more "targeted" approach to fight the medical condition often referred to as the "silent killer".

According to a recent WHO report, 188.3 million people in India suffer from hypertension but only 37% get diagnosed, only 30% start treatment, and only 15% manage to keep their blood pressure under control. It estimated that at least 4.6 million deaths in India can be prevented by 2040 if half of those with the condition manage to keep their blood pressure under control.

The district-level study, published in JAMA Network, a journal published by the American Medical Association, was conducted by AIIMS Delhi and scientists from Europe and the US who used the hypertension data from NFHS-5, the fifth round report of which was released in May 2022. The researchers have also created a dashboard of district- and state-wise hypertension caseload in India, which they said will help stakeholders identify priorities for reducing burden and tracking progress.

Analysing data of nearly 1.7 million respondents across socio-demographic groups in 707 districts, the study found that one in four adults had hypertension. Of these, only one in three came to know of their condition after being diagnosed with it, less than one in five were treated, and only one in 12 had their blood pressure under control.

More significantly, the study found, there were substantial variations across districts in blood pressure diagnosis (range: 6.3%-77.5%), treatment (range: 8.7%-97.1%) and control (range: 2.7%-76.6%). Raising a red flag, the researchers said that the national mean values of hypertension "hide considerable" variation at the district level and recommended a critical public health strategy to improve care — "targeted, decentralised solutions" at the district level.

According to Dr Ambuj Roy, Professor of Cardiology at AIIMS and one of the investigators of the study, the district-wise level analysis was important as the many state-level analyses done earlier did not highlight "the heterogeneity" within states, even those considered better-performing states. And with the new dashboard, he said, every district can now analyse their data according to gender and socio-demographic disparities.

"The NFHS 5 data is available publicly, but we took the variables relevant to hypertension, such as age, gender, socio-economic status, and it is the first time that data on hypertension was analysed district-wise. We have also opened the dashboard for academicians and administrators to access it. The dashboard was created as a part of the study and has gender-wise, area-wise educational levels data on hypertension," Dr Roy said.

The findings of the study showed that despite health being a state subject, there was a need for more autonomy at the district level, Dr Roy said: "Chief Medical Officers should know where they are failing in terms of hypertension management and what measures they could take, rather than having a similar approach for all districts in a state. We need to look at the continuum of care within each district and within each state, however good or bad that state or district may be."

Another key finding of the study was the importance of screening hypertension and diabetes using local healthcare workers, including ASHA workers. Said Dr Roy: "So that you can increase and improve the pick-up rates. Instead of people coming to the hospital, you go to them and do hypertension screening in a door-to-door survey, and even the treatment should be provided through the nearest healthcare facility rather than them coming to the tertiary healthcare facility and district hospitals."

Context: Recently, **a district-level study on hypertension in India**, conducted by AIIMS Delhi and scientists from Europe and the US, revealed significant disparities in care. The findings, published in JAMA Network, utilized **hypertension data from NFHS-5,** the fifth round report of which was released in May 2022.

Key Points of Report

- **In Karnataka, four districts** — Chikmagalur, Shimoga, Udupi and Chitradurga — have a **similar prevalence of hypertension**, but the proportion of participants diagnosed and treated in Chikmagalur and Udupi was higher.
- **In Meghalaya, the five districts** of Garo Hills, the two districts of Jaintia Hills and the three districts of Khasi Hills all have a s**imilar prevalence of hypertension, but the proportion of those diagnosed is much lower in Garo Hills** than in Jaintia Hills and Khasi Hills.
- **According to a recent WHO report**, **188.3 million people** in India suffer from hypertension but only 37% get diagnosed, only 30% start treatment, and only 15% manage to keep their blood pressure under control.
- It estimated that **at least 4.6 million deaths in India can be prevented by 2040** if half of those with the condition manage to keep their blood pressure under control.

Hypertension

- **About:** Hypertension, or high blood pressure, occurs when the pressure in your blood vessels exceeds 140/90 mmHg. If left untreated, it can pose serious health risks.
- **Blood pressure is denoted by two numbers**: the first **(systolic)** indicates the pressure when the heart contracts, and the **second (diastolic)** indicates the pressure during the heart's resting phase between beats.
- **World Hypertension Day:** Every year on May 17
- **Aim:** To raise awareness about hypertension and urging individuals to take measures to prevent and manage this silent threat to health.

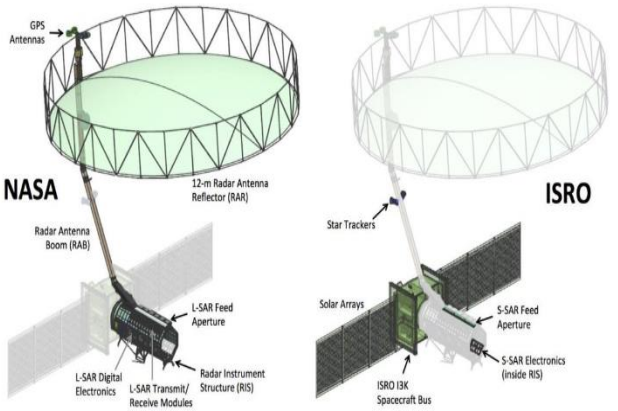
NISAR
(Syllabus: GS Paper 3 – Sci and Tech)

NASA–ISRO radar satellite to offer detailed insights into forests and wetlands: Know all about NISAR

Context: The **'NASA-ISRO Synthetic Aperture Radar' (NISAR)** is poised to facilitate the exploration of how shifts in Earth's forest and wetland ecosystems impact the global carbon cycle and influence climate change.

'NASA-ISRO Synthetic Aperture Radar' (NISAR)

- **Joint Development**: NISAR, the Low Earth Orbit (LEO) observatory, is a collaborative effort **between NASA and ISRO**.
- **Size and Weight**: This SUV-sized satellite boasts a weight of 2,800 kilograms.
- **Dual-Frequency Radar**: NISAR features **both L-band and S-band synthetic aperture** radar (SAR) instruments, making it a unique dual-frequency imaging radar satellite.
- **Capabilities**: To utilize two different radar frequencies (L-band and S-band) for monitoring and measuring changes in the Earth's surface.
- **All-Weather Observations**: The SAR instruments on NISAR are adept at penetrating clouds and can gather data day and night, regardless of prevailing weather conditions.
- **Contributions**: In the collaborative project, **NASA has contributed the L-band radar**, **GPS, a high-capacity solid-state recorder**, and a payload data subsystem. Meanwhile, **ISRO has provided the S-band radar,** the GSLV launch system, and the spacecraft.
- **Gold-Plated Reflector**: NISAR incorporates a substantial 39-foot stationary antenna reflector constructed from gold-plated wire mesh.
- This reflector plays a **crucial role in focusing the radar signals** emitted and received by the upward-facing feed on the instrument structure.



NISAR observatory, with NASA and ISRO contributions highlighted

Objectives

- The mission aims **to collect data on Earth's evolving ecosystems**, dynamic surfaces, and ice masses.
- This data will offer insights into biomass, natural hazards, sea level rise, and groundwater.
- **NISAR is designed to provide global coverage o**f Earth's land and ice-covered surfaces through 12-day regular observations on both ascending and descending orbital passes.

HINDUSTAN TIMES

Oct 29

UNGA RESOLUTION

(Syllabus: GS Paper 2 – International Realtions)

India explains why it abstained in UN vote on Israel-Hamas conflict

Context: India is committed **to countering terrorism such as the Hamas attacks** on Israel, and has **concerns about the civilian casualties** in Gaza despite the country's **decision to abstain on a UN General Assembly (UNGA)** resolution calling for a humanitarian truce.

UNGA Resolution:

- An "**immediate, durable and sustained humanitarian truce**" between Israeli forces and Hamas militants in the Gaza Strip.
- It also demanded "**continuous, sufficient and unhindered" provision of lifesaving supplies and services** for civilians trapped within the enclave amid an expansion of Israeli ground operations and bombardment.
- The **non-binding resolution proposed by Jordan** was adopted by a large majority of member states, with 120 votes in favour, 14 against and 45 abstentions.
- **Israel, the US, Hungary** and five Pacific Island states were among the countries that voted **against the resolution** at an extraordinary special session.

Why India abstained?

- **Reasons:** The absence of all elements of India's approach being covered in the final text of the resolution. The scale and intensity of violence witnessed so far is "an affront to basic human values". Violence also does not pave the way for any durable solutions
- **Amendment proposed:** The resolution did not include any "explicit condemnation" of the terror attacks by Hamas.
- **India's proposal:** India calls for the immediate and unconditional release of hostages. "Terrorism is a malignancy and knows no borders, nationality or race. The world should not buy into any justification of terror acts. Let us keep aside differences, unite and adopt a zero-tolerance approach to terrorism,"

UN General Assembly

- **Establishment:** In 1945 under the United Nations (UN) Charter
- **Member Countries**: All 193 members
- **UNGA President**: The UNGA is headed by its President, who is elected for a term of one year.
- **Composition**: United Nations General Assembly comprises all 193 Members of the United Nations.
- **Mandate**: provides a unique forum for multilateral discussion of the full spectrum of international issues covered by the Charter.
- It also plays a significant role in the process of standard-setting and the codification of international law.

INDIA AS A DEVELOPED COUNTRY

(Syllabus: GS Paper 3 – Economy)

VISION SOON FOR 100TH YEAR OF INDEPENDENCE

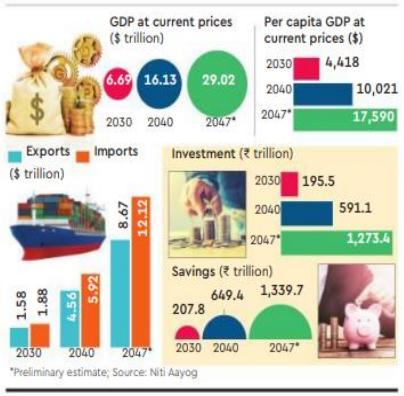
Developed India by 2047: Niti

PM to unveil plan in December-January

PRASANTA SAHU
October 29, New Delhi

INDIA WILL AIM to become a 'developed nation' by 2047, with an economy of $30 trillion in its 100th year of independence, propelled by radical policy changes and reforms in governance by 2030, said Niti Aayog chief executive officer BVR Subrahmanyam.

The 'Viksit Bharat @2047' document is in the final lap of completion after Prime Minister Narendra Modi envisaged it in December 2021. Ten sectoral groups of secretaries (SGoSs), which were tasked to prepare sectoral visions, are almost finalised and Niti Aayog will merge these into a consolidated vision document by December after consultation with SGoSs and thought leaders, including industry captains. PM Modi will unveil the vision document in December-January. The ten SGoS were: rural & agriculture, infrastructure, resources, social vision, welfare, finance & economy, commerce & industry, technology, governance, and security & foreign affairs. The Finance Ministry prepared a template of where the economy will be over the next 25 years. "It is roughly talking about $30 trillion economy size by 2047, population of around 1.5 billion and per capita income between $18,000 to $20,000," Subrahmanyam said. All the sectoral groups used the template to prepare their vision documents.



India's economy was $3.5 trillion in FY23. India's per capita income was estimated at around $2,500 in FY23. Countries with per capita income beyond a threshold of $17,000 are considered developed nations. "The biggest thing we are all worried about is what is called the middle-income trap where we will reach $5,000-$6,000 per capita income and then not move fast. The whole purpose of a vision is to avoid that and take the country to the next level," Subrahmanyam said, adding that India can't afford such a trap like what happened to Argentina.

The Niti Aayog CEO said there would be two halting points in the roadmap: medium-term interventions or actions now for 2030 and structural reforms or actions by 2030 for 2047. The Vision document would say where India will be in 2047 in various socio-economic indicators, what sectors/technologies India should be leading in, what areas India would have global champions and other institutional capabilities.

Subrahmanyam said one SGoS have delved into the requirement of radical government restructuring horizontally and vertically given that senior officials spend most of their time firefighting instead of focusing on strategizing for the future. "We need to recast government so that decisions are taken at the lower level, the upper level spends time thinking about the future," he added.

India's growth is closely interlinked with the growth of states. This will be the guiding spirit of India's inclusive and sustainable vision for the next quarter century.

Context: Niti Aayog recently announced that **India's ambitious goal** is to transform into a **'developed nation' by 2047,** boasting a **$30 trillion economy in its centenary year** of independence, driven by substantial policy changes and governance reforms to be achieved by 2030.

- **India's growth is closely** interlinked with the **growth of states**. This will be the guiding spirit of India's inclusive and sustainable vision for the next quarter century.

Where does India stand?

- **India's Economic Classification**: India is categorized as both a "developing economy" and a "lower middle-income country."
- **GDP Comparison**: When examining the absolute level of GDP, India stands as one of the world's largest economies, although the United States and China maintain a significant lead.
- **Per Capita Income:** It is a crucial factor in classifying a country as "developed." In this aspect, India lags behind even Bangladesh.
- **Progress in Human Development:** India has shown consistent progress on various Human Development Index (HDI) metrics, with a focus on three critical factors:
  - Health and longevity of its citizens
  - Quality of education
  - Standard of living
- **Life expectancy at birth in India**: It has risen from approximately 40 years in 1947 to nearly 70 years today.

Developed Country

- There is no accepted universal definition of developed/developing country.
- A Developed Country is characterized by **industrialization, a high quality of life**, a well-developed economy, and advanced technological infrastructure when compared to less industrialized nations.
- **On the other hand**, developing countries are either in the **midst of industrialization or are predominantly agrarian** and pre-industrial in nature.

LIVEMINT

Page 3

DPDP ACT 2023

(Syllabus: GS Paper 2 – Governance)

‘Cos yet to acquire skills to implement DPDP Act’

Sohini Bagchi
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NEW DELHI

With the passing of the Digital Personal Data Protection (DPDP) Act 2023 by the government, nearly half of Indian organizations—both enterprises and start-ups—believe they lack the necessary skill sets to implement the DPDP Act 2023, according to a new report.

TECHCIRCLE

DPDP law became an Act after it received the President's assent on 12 August. DPDP Act has been passed, but is not yet in force.

The report, titled "The India Data Protection Readiness Report," published on Sunday by consulting firm EY shows that 32% of organizations foresee technical implementation challenges, while 50% are yet to acquire relevant skills but are open to outsourcing data privacy tasks.

Context: Recently, with the **government's enactment of the Digital Personal Data Protection** (DPDP) Act 2023, **a recent report reveals that nearly half of Indian** organizations, **both large and small, lack the necessary skill sets** to effectively implement this legislation.

Digital Personal Data Protection Act 2023

- **About:** An Act to provide for the **processing of digital personal data** in a manner that recognises both the right of individuals to protect their personal data and the need to **process such personal data for lawful purposes and for matters** connected therewith or incidental thereto.
- The Ministry of Electronics and Information Technology has been discussing digital personal data and its protection, culminating in the **'Digital Personal Data Protection Bill, 2023.'**
- The **Act aims to establish** a framework for processing digital personal data that respects both individuals' rights to safeguard their data and the necessity of processing data for legitimate purposes.

Provisions of the Act

- **Application:** The **Act is applicable when processing** digital personal data within India, under the following circumstances: Data is collected online & Data is collected offline, and then digitized.
  - It also applies to the processing of **personal data outside India** if the purpose is to offer goods or services within India.
  - **Personal data can only be processed** for lawful purposes with the individual's consent.
- **Consent:** For individuals **below 18 years of age**, consent must be granted by a parent or legal guardian.
- **Rights of Data Principal:** A data principal, who is an individual undergoing data processing, possesses the following rights:
  - The right to obtain information regarding the processing of their data.
  - The right to request the correction and deletion of their personal data.
- **Personal data beyond India:** It permits the transmission of personal data beyond India, barring countries that have been prohibited by the central government through an official notification.

TIMES OF INDIA
Oct 29

ONLINE DISPUTE RESOLUTION

(Syllabus: GS Paper 3 – Economy)

India holds meet to find ways to seamlessly address cross-border consumer complaints in e-commerce sector

Context: India has recently taken the lead in **pioneering an online dispute resolution (ODR)** platform for seamlessly addressing cross-border consumer complaints related to e-commerce.

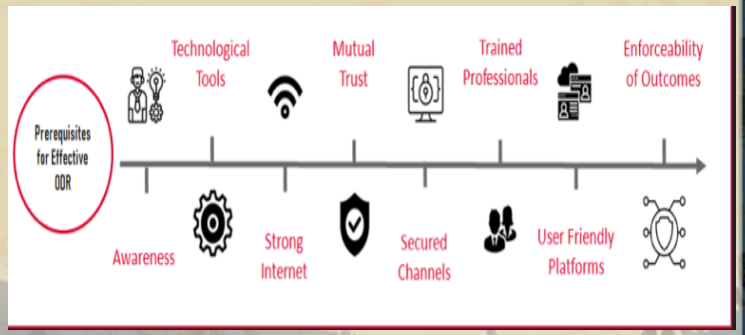
- **India hosted the first conference to deliberate** on the framework of ODR, which was virtually attended by top representatives of UN Conference on Trade and Development (UNCTAD), Federal Trade Commission of the USA, the Competition Markets Authority of the UK and Asia-Pacific Economic Cooperation (APEC).

Online Dispute Resolution (ODR)

- ODR has **its roots in the convergence of ADR** and the Information and Communication Technology (ICT) of the digital era.
- Unlike traditional methods, **it leverages technology to simplify** and enhance dispute resolution.
- It resembles **Alternative Dispute Resolution (ADR) but utilizes various digital tools**, including multichannel communication, case management systems, and digital signatures.
- ODR **integrates cutting-edge technologies such as blockchain**, natural language processing, artificial intelligence, and machine learning.
- **It transcends simple audio/video** conferencing, aiming to optimize the entire process of resolving disputes.

Alternative Dispute Resolution

- ADR, encompasses **alternative methods for resolving disputes outside** of court litigation.
- It involves the **involvement of a neutral third party** who facilitates communication, discussion, and resolution of differences between the disputing parties.
- **ADR can address various civil dispute** matters as explicitly outlined in the law.
- **Examples:** Mediation, arbitration, and neutral evaluation



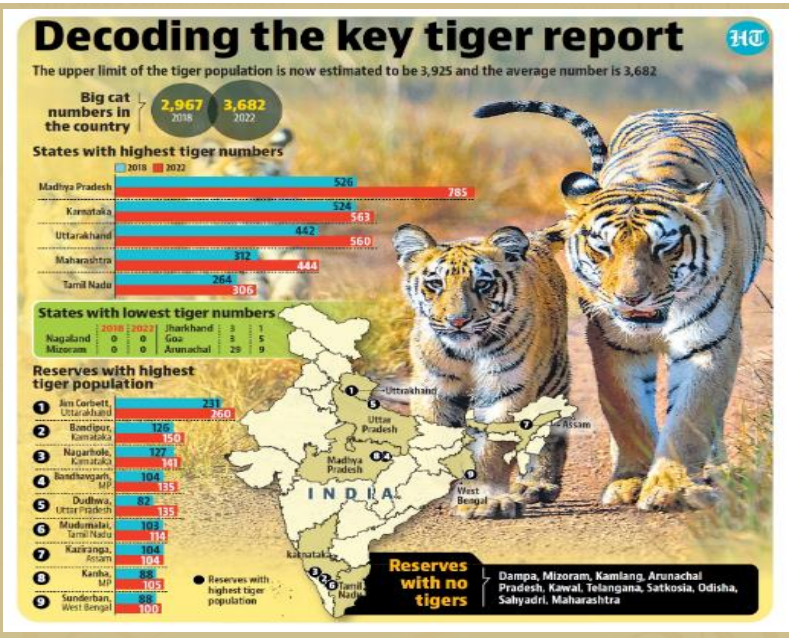
PIB

Oct 29

NTCA
(Syllabus: GS Paper 3 – Env and Eco)

National Tiger Conservation Authority (NTCA) organising an art exhibition "Silent Conversation: From Margins to the Centre" , 3rd- 5th November 2023 in New Delhi

Context: The **National Tiger Conservation Authority (NTCA)** Ministry for Environment, Forest & Climate Change in **collaboration with the Sankala Foundation** is organising an art exhibition titled, "Silent Conversation: From Margins to the Centre",



National Tiger Conservation Authority (NTCA)

- **About**: It is a **statutory organization** created under the **Wild Life (Protection) Amendment Act, 2006** following the recommendation of the Tiger Task Force.
- **Chairperson:** Minister of Environment .
- **Members include**: Member of Parliament, Experts & Professionals, Chairpersons of National Commission for the Scheduled Tribes and Scheduled Caste etc.

Objectives

- To **grant statutory authority to Project Tiger**, making compliance with its directives a legal requirement.
- To **enhance accountability in the management** of Tiger Reserves by facilitating Memoranda of Understanding (MoU) between the Center and State governments within the federal structure.
- To **establish parliamentary oversight** in the process.
- To cater to the livelihood concerns of local communities **residing in the vicinity of Tiger Reserves.**

Project Tiger

- It is a **Centrally Sponsored Scheme** of the Ministry of Environment.
- Launched in 1973 for **in-situ conservation** of wild tigers in **designated tiger reserves.**
- The **National Tiger Conservation Authority** (NTCA) has an overarching supervisory role, performing functions as provided under the **Wildlife (Protection) Act, 1972.**

DTE Oct 29

AMAZON RIVER BASIN

(Syllabus: GS Paper 1 – Geography)

Drought in the Amazon can cause local caiman extirpations, spike human-caiman conflict

Context: The **Amazon river basin is currently** experiencing a **severe drought,** which has caused the **region's waterways to reach their lowest levels** since the early 20th Century.



Amazon River Basin

- **About**: It is the greatest river of South America and the largest drainage system in the world in terms of the volume of its flow and the area of its basin.
- **Course**: Its excursion begins in the Andes Mountains, high in the Andes.
- **Coverage Areas**: The Amazon River Basin spans across several South American countries including Venezuela, Suriname, Peru, Guyana, Brazil, Ecuador, Colombia, and Bolivia.
- **Distance**: 6,400 kilometers.
- **Tributaries:** It contains about 1,100 tributaries.
- Among the numerous notable tributaries are the Rio Negro, the Madeira River, and the Xingu River.
- **Home to 4 Different Species of Caiman**: Black caiman (Melanosuchus niger), spectacled caiman (Caiman crocodilus), Cuvier's dwarf caiman (Paleosuchus palpebrosus), and smooth-fronted caiman (Paleosuchus trigonatus).

Causes of the Severe Drought

- **Onset of El Niño**: This event refers to an abnormal warming of surface waters in the equatorial Pacific Ocean.
- **Extreme heat**: The warming associated with **El Niño exacerbates drought conditions**, leading to a decrease in humidity and a lack of rainfall.
- **High water temperatures**: During El Niño, the northern tropical Atlantic Ocean experiences unusually high water temperatures.
- **Deforestation**: Rampant deforestation leads to the destruction of vast areas of vegetation, contributing to **rising temperatures and a reduction in evapotranspiration**, a crucial process for the water balance in the region.
- **Mining**: Disorganised **mineral extraction results in the creation of banks of land** that are harmful to navigation.

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