



GANHRI Defers Accreditation of NHRC

For Prelims: [NHRC](#), GANHRI, Human Rights, United Nations, [Paris Principles](#), [Supreme Court](#)

For Mains: UN Body Defers Accreditation of NHRC.

Why in News?

For the second time in a decade, **Global Alliance of National Human Rights Institutions (GANHRI)** deferred the accreditation of [National Human Rights Commission \(NHRC\)](#), citing objections like **political interference in appointments** among others.

- The GANHRI had granted **'A' status of accreditation to NHRC in 2017**, after deferring it the year before — the first such instance since NHRC was established (1993).
- Without the accreditation, NHRC will be unable to represent India at the UN Human Rights Council.

What is GANHRI?

- GANHRI is **recognised and a trusted partner, of the United Nations**.
- It was established in 1993 as the **International Coordinating Committee of National Institutions** for the promotion and protection of human rights (ICC).
- It has been known as the Global Alliance of National Human Rights Institutions (GANHRI) since 2016 and is a member-based network organization that gathers NHRIs from all around the world.
- It is composed of 120 members, **India also is a member of GANHRI**
- Its secretariat is situated in **Geneva, Switzerland**.

Why are the Reasons for Deferment?

- The GANHRI cited reasons such as:
 - **Lack of diversity** in staff and leadership
 - **Insufficient action** to protect marginalized groups
 - **Involving the police in probes** into human rights violations
 - **Poor cooperation** with civil society
- The GANHRI said the NHRC has repeatedly **failed to deliver its mandate**, in particular to protect the rights of people from marginalized communities, religious minorities, and human rights defenders.
- NHCR's lack of independence, pluralism, diversity and accountability are **contrary to the U.N.'s principles on the status of national institutions** (the 'Paris Principles').

What are the Paris Principles and 'A' Status?

- The [United Nations' Paris Principles](#), adopted in 1993 by the UN The General Assembly provides the international benchmarks against which **National Human Rights Institutions**

(NHRI) can be accredited.

- The Paris Principles set out six main criteria that NHRIs are required to meet. These are:
 - Mandate and competence
 - Autonomy from government
 - Independence guaranteed by a statute or Constitution
 - Pluralism
 - Adequate resources
 - Adequate powers of investigation.
- The GANHRI is a group of 16 human rights agencies – 4 from each region; the Americas, Europe, Africa, and the Asia-Pacific – that have the **Highest Rating ('A') for following the Paris Principles.**
- The 'A' rating also lets them join the **work of the GANHRI and the UN on human rights issues.**
 - The NHRC got its 'A' rating in 1999 and kept it in 2006, 2011, and 2017 after a delay. The GANHRI had delayed it because of some problems with the NHRC's staff and appointments. The NHRC is led by Justice Arun Mishra, who used to be a Supreme Court judge.

What is NHRC?

▪ About:

- NHRC of India is an **independent statutory body established on 12th October, 1993** as per provisions of **Protection of Human Rights Act, 1993**, later amended in 2006.
- It is the watchdog of human rights in India, i.e. the **rights related to life, liberty, equality and dignity of the individual guaranteed** by Indian Constitution or embodied in the international covenants and enforceable by courts in India.
- It was established in conformity with the **Paris Principles, adopted for the promotion and protection of human rights in Paris (October, 1991)** and endorsed by the on 20 December, 1993.

▪ Composition:

- **Key Members:** It is a multi-member body consisting of a chairperson, five full-time Members and seven deemed Members.
 - A person who has been the **Chief Justice of India or a judge of the Supreme Court** can become a chairman.
- **Appointment:** The chairperson and members are appointed by the **President** on the recommendations of a six-member committee consisting of the Prime Minister as its head, the **Speaker of the Lok Sabha**, the Deputy Chairman of the Rajya Sabha, leaders of the Opposition in both the Houses of **Parliament** and the Union Home Minister.
- **Tenure:** The chairperson and members hold office for a **term of three years or until they attain the age of 70 years**, whichever is earlier.
 - The President can remove the chairman or any member from the office under some circumstances.
- **Removal:** They can be removed only on the charges of proved misbehavior or incapacity, if proved by an inquiry conducted by a Supreme Court Judge.
- **Divisions:** Commission also has five Specialized Divisions i.e. Law Division, Investigation Division, Policy Research & Programmes Division, Training Division and Administration Division.

What are the Challenges Related to NHRC?

▪ Mechanism of Investigation:

- NHRC lacks a **dedicated mechanism for conducting investigations.** Instead, it relies on the **concerned Central and State Governments** to investigate cases of human rights violations.

▪ Time Limit for Complaints:

- Complaints registered with NHRC after one year of the incident **are not entertained**, resulting in many grievances going unaddressed.

▪ Decision Enforcing Power:

- NHRC can only make recommendations and **does not have the authority to enforce its decisions** or ensure compliance.

- **Underestimation of Funds:**
 - NHRC is sometimes perceived as a **post-retirement destination for judges** and bureaucrats with political affiliations. Additionally, inadequate funding hampers its effective functioning.
- **Limitations of Powers:**
 - State human rights commissions do not have **the authority to request information from the national government.**
 - Consequently, they face challenges in investigating **human rights violations by armed forces under national control.**
 - NHRC's powers are related to **violations of human rights by the armed forces** that have been largely restricted.

Way Forward

- The government should take steps to make NHRC's decisions enforceable, ensuring that **recommendations and directives are effectively implemented.** This will enhance the impact and accountability of NHRC's interventions.
- The composition of NHRC **should be diversified by including members from civil society and human rights activists.** Their expertise and perspectives will bring fresh insights and contribute to a more comprehensive approach in addressing human rights violations.
- NHRC needs to establish an **independent cadre of staff with relevant expertise** and experience in human rights. This will enable the commission to carry out thorough investigations, conduct research, and provide informed recommendations.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims:

Q. Other than the Fundamental Rights, which of the following parts of the Constitution of India reflect/reflects the principles and provisions of the Universal Declaration of Human Rights (1948)? (2020)

1. Preamble
2. Directive Principles of State Policy
3. Fundamental Duties

Select the correct answer using the code given below:

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

Ans: (d)

Q. Consider the following: (2011)

1. Right to education
2. Right to equal access to public service
3. Right to food.

Which of the above is/are Human Right/Human Rights under “Universal Declaration of Human Rights”?

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

Ans: (d)

Mains:

Q. Though the Human Rights Commissions have contributed immensely to the protection of human rights in India, yet they have failed to assert themselves against the mighty and powerful. Analysing their structural and practical limitations, suggest remedial measures. **(2021)**

Q. National Human Rights Commission (NHRC) in India can be most effective when its tasks are adequately supported by other mechanisms that ensure the accountability of a government. In light of the above observation assess the role of NHRC as an effective complement to the judiciary and other institutions, in promoting and protecting human rights standards. **(2014)**

Source: TH

Child Wasting in India

For Prelims: India's Child Wasting, [UNICEF](#), [WHO](#), [World Bank](#), [Malnutrition](#), [WHA](#), [SDG](#).

For Mains: India's Child Wasting.

Why in News?

Recently, [UNICEF \(United Nations Children's Fund\)](#), [WHO \(World Health Organization\)](#), [World Bank Group](#) have released a report titled- "**Levels and trends in child malnutrition: Joint Child Malnutrition Estimates (JME)**", stating that in 2020, 18.7 % of Indian children were affected by [Wasting caused by poor nutrient intake](#).

What are Joint Malnutrition Estimates (JME)?

- The JME group was created in **2011 to address the call for harmonized child [Malnutrition estimates](#)**.
- The inter-agency team releases **annual estimates for child stunting, overweight, underweight**, wasting and severe wasting.
- Child malnutrition estimates for the indicators stunting, wasting, overweight and underweight describe the magnitude and patterns of under- and overnutrition.
 - The UNICEF-WHO-WB Joint Child Malnutrition Estimates inter-agency group updates regularly the global and regional estimates in prevalence and numbers for each indicator.
- The key findings in the 2023 Edition include **global and regional trends for all mentioned indicators** as well as country-level modelled estimates for stunting and overweight.

What are the Findings of the Report?

- **Wasting:**
 - Half of all children with wasting in the world live in India.
 - In 2022, an estimated 45 million children under five (6.8 %) were affected by wasting globally, of which 13.6 million were suffering from severe wasting.

- More than three quarters of all children with severe wasting live in Asia and another 22 % live in Africa.

- **Stunting:**

- India had a stunting rate of 31.7 % in 2022, down from 41.6 % in 2012, a decade ago.
 - Some 148.1 million of children under age five worldwide, were affected by stunting in 2022.
 - Nearly all children affected lived in Asia (52 % of the global share) and Africa.

- **Overweight:**

- There are 37 million children under five who **are overweight globally**, an increase of nearly four million since 2000.
- India had an overweight percentage of 2.8 % in 2022, compared to 2.2 % in 2012.

- **Progress:**

- There is insufficient progress to reach the **2025 [World Health Assembly \(WHA\) global nutrition targets](#)** and UN-mandated **[Sustainable Development Goal target 2.2](#)**.
 - **WHA global Nutrition Targets are:**
 - Reduce stunting by 40% in children under 5
 - Reduce the prevalence of anaemia by 50% among women in the age group of 19-49 years
 - Ensure 30% reduction in low-birthweight
 - Ensure no increase in childhood overweight;
 - Increase the rate of exclusive breastfeeding in the first six months up to at least 50%
 - Reduce and maintain childhood wasting to less than 5%.
 - Only about a third of all countries are 'on track' to halve the number of children affected by stunting by 2030 and assessment of progress to date not being **possible for about one quarter of countries**.
 - Even fewer countries are expected to achieve the 2030 target of 3% prevalence for overweight, with just one in six countries currently 'on track'.
 - An assessment of progress towards the wasting target is not possible for nearly half of countries.

What are the Recommendations?

- Children suffering from severe wasting require **early detection and timely treatment** and care to survive.
- More intensive efforts are **required if the world is to achieve the global target** of reducing the number of children with stunting to 89 million by 2030.
- Gaps in the available data in some regions make it challenging to accurately assess progress towards global targets. Regular data collection is therefore critical to monitor and analyze country, regional and global progress on child malnutrition moving forward.

What is Malnutrition?

- **About:**

- Malnutrition refers to **deficiencies, excesses or imbalances in a person's intake** of energy and/or nutrients.
- The term malnutrition covers two broad groups of conditions.
 - One is 'Undernutrition'—which includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies or insufficiencies (a lack of important vitamins and minerals).
 - The other is **Overweight**, obesity and diet-related **[noncommunicable diseases \(such as heart disease, stroke, diabetes and cancer\)](#)**.
 - Childhood overweight occurs when children's calorie intake from food and beverages exceeds their energy requirements.

- **Indian Initiatives Related to Malnutrition:**

- **[Mid-day Meal \(MDM\) scheme](#)**
- **[POSHAN Abhiyaan](#)**
- **[The National Food Security Act \(NFSA\), 2013](#)**,
- **[Pradhan Mantri Matru Vandana Yojana \(PMMVY\)](#)**

- [Integrated Child Development Services \(ICDS\) Scheme](#)
- [Aspirational District Programme](#)

UPSC Civil Services Examination, Previous Year Question (PYQ)

Mains

Q. How far do you agree with the view that the focus on lack of availability of food as the main cause of hunger takes the attention away from ineffective human development policies in India? (250 words)

Source: DTE

WMC Approves Global Greenhouse Gas Watch

For Prelims: [WMO](#), [Climate Change](#), [Green House Gas](#), [UNFCCC](#).

For Mains: [Need for Global Greenhouse Gas Watch](#).

Why in News?

Recently, the 19th [World Meteorological Congress \(WMC\)](#) has approved the [Global Greenhouse Gas \(GHG\) Watch \(G3W\)](#), a **GHG** monitoring initiative, to reduce the heat-trapping gases and combat [Climate Change](#).

- The [World Meteorological Organisation \(WMO\)](#) in the Collaboration with WHO also framed **2023-2033 Implementation Plan for Advancing Climate, Environment and Health Science and Services** to manage the impact of Climate Change.

Note: The Nineteenth World Meteorological Congress (Cg-19) is currently taking place from 22 May to 2 June 2023 at the International Conference Centre of Geneva (CICG). It is the supreme body of the World Meteorological Organization (WMO).

What is the World Meteorological Organization (WMO)?

- The WMO is an intergovernmental **organization with a membership of 192 Member States and Territories**.
 - India is a member of WMO.
- It originated from the **International Meteorological Organization (IMO)**, which was established after the **1873 Vienna International Meteorological Congress**.
- Established by the ratification of the **WMO Convention on 23rd March 1950**, WMO became the **specialized agency of the United Nations** for meteorology (weather and climate), operational hydrology and related geophysical sciences.
 - WMO is headquartered in Geneva, Switzerland.

What is the Greenhouse Gas Watch (G3W)?

▪ About:

- It will establish internationally coordinated top-down monitoring of greenhouse gas fluxes to support the provision of actionable information to the [UNFCCC Parties](#) and other stakeholders.
- The GHG watch will fill critical information gaps and provide an **integrated and operational framework**. The framework will bring all space-based and surface-based observing systems, as well as modeling and data assimilation capabilities, under one roof.

▪ Implementation:

- The monitoring infrastructure will build on and expand WMO's long-standing activities in GHG monitoring, implemented as part of the **Global Atmosphere Watch (GAW)** and via its **Integrated Global GHG Information System (IG3IS)**.
 - The GAW of WMO focuses on building a single coordinated global understanding of atmospheric composition, its change, and helps to improve the understanding of **interactions between the atmosphere, the oceans and the biosphere**.
 - IG3IS aims to coordinate an integrated global GHG information system, **linking inventory and flux model based information with atmospheric observations** and modelling, to provide the best possible estimates of greenhouse gas emissions at the national and urban scales.

▪ Components:

- Surface-based and satellite-based observations
- Prior estimates of the GHG emissions based on activity data and process-based models
- Global high-resolution Earth System models representing GHG cycles
- Data assimilation systems associated with models to generate products of higher accuracy

▪ Significance:

- At present, **there is no comprehensive, timely international exchange** of surface and space based GHG observations or modelling products.
- GHG monitoring infrastructure will help improve understanding of the carbon cycle. Understanding the full carbon cycle is **vitaly important for the planning of mitigation activities**.
- Globally consistent, gridded information on GHG and their fluxes with appropriate time resolution **will help in the improved evaluation of sources** and sinks of GHG and indicate their association with the biosphere, the ocean and the permafrost areas.

What are Greenhouse Gases?

▪ About:

- A greenhouse gas (GHG) is a gas that absorbs and emits radiant energy at thermal infrared wavelengths, causing the greenhouse effect.
- The primary GHGs in Earth's atmosphere are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and ozone (O₃).

▪ Initiatives to Curb GHGs:

- **Global:**
 - [Paris Agreement](#)
 - [UN SDGs](#)
- **India:**
 - [National Action Plan to Combat Climate Change \(NAPCC\)](#)
 - [India Cooling Action Plan](#)

What is the 2023-2033 Implementation Plan?

▪ Objective:

- The plan aims to achieve “better health and well-being for people facing existing and emerging extreme weather events, climate change and environmental risks **through the effective integration of climate, environment and health science** and services across the world”.
- It seeks to promote **a coordinated approach to manage the impact of climate, weather,** air pollution, ultraviolet radiation, extreme events and other environmental factors on health.
- **Need:**
 - By 2030-2050, climate change is **projected to cause approximately 250,000 extra deaths** annually due to **malnutrition, malaria, diarrhoea, and heat stress**.
 - If current emission levels persist, up to **8.4 billion people could be at risk from malaria and dengue**, two major vector-borne diseases, by the end of the century.
 - Concerns arise regarding extreme heat and the importance of strengthening understanding, early warning systems, and risk management for climate-related risks like heat waves, wildfires, and air quality issues.
 - In 2022, India experienced its hottest March, leading to early heat waves across various regions.
 - Extreme heat will expose **600 million Indians to dangerous temperatures by 2030**.

[Source: DTE](#)

AI-Generated Works and Copyright Ownership

For Prelims: [Artificial intelligence](#), [Copyright Infringement](#), [ChatGPT](#)

For Mains: Impact of the intersection between copyright infringement and AI, Fair use and transformative use in the context of AI-generated works

Why in News?

Recently, the issue of copyright infringement in the context of [artificial intelligence \(AI\)](#) has gained considerable attention and sparked essential discussions.

- A prominent case that exemplifies this intersection involves the Andy Warhol Foundation and Lynn Goldsmith's photograph of musician Prince.
 - The dispute revolves around the question of whether Warhol's use of the photograph in creating multiple adaptations constitutes fair use or [copyright infringement](#).

What is the Relationship Between Copyright Infringement and AI?

- **Use of Copyrighted Material as Training Data:**
 - AI systems like [ChatGPT](#), often **require large amounts of data to train their algorithms** effectively.
 - This **includes copyrighted material** such as images, texts, and music, which may raise copyright infringement concerns.
 - AI technologies can be used to replicate or mimic existing copyrighted works. The algorithms can analyse and generate content that closely resembles protected works, raising questions about the legality and ethical implications of such replication.
- **Fair Use and Transformative Use:**

- **Fair use is a legal doctrine of the US (as US Supreme Court observed recently)** that **allows for limited use of copyrighted material without permission**, under certain circumstances.
 - Determining whether an AI-generated work qualifies as fair use requires considering factors such as the **purpose, nature, amount, and effect of the use**.
- **Transformative use**, which involves adding new meaning or expression to a copyrighted work, is often a crucial factor in fair use analysis.
- **Liability and Responsibility:**
 - Determining liability for copyright infringement in AI-generated works can be **complex, involving questions about the role of AI developers, users, and the AI itself**.
 - The responsibility for ensuring compliance with copyright law rests with both the **creators and users of AI-generated works**.
 - If an AI system creates a work without human intervention, determining the rightful copyright owner becomes challenging.

What is the Current Legal Position of AI-generated Content in India?

- **Indian Copyright Act, 1957 and The Patents Act, 1970** provides specific provisions for **fair dealing and enumerated exceptions to copyright infringement**.
- The use of copyrighted materials for training AI models is considered to be in a **legal grey area**.
 - As it stands now, **copyright laws do not safeguard any creation that is wholly generated by AI**, regardless of whether it stemmed from a human-crafted text prompt.
- The observations and rulings of international and other courts, such as the recent US Supreme Court decision on copyright and AI, **may influence interpretations of fairness in Indian copyright law**.
- Indian copyright law and fair use provisions **will need to adapt to address the challenges posed by AI-generated content**.

Way Forward

- Despite the lack of legal precedent, the four-factor test laid down by the **Kerala High Court** in the case of **Civic Chandran versus C. Ammini Amma (1996)** can be useful when determining if a use is considered fair use. It is like the four-factor test of the US fair use doctrine. These factors are:
 - The **purpose of the use**, including whether it is for **commercial or non-profit educational purposes**.
 - The **nature** of copyrighted work.
 - The **amount and substantiality of the portion used** in comparison to the entire copyrighted work.
 - The **impact of the use on the potential market or value** of the copyrighted work.
- **Update intellectual property laws** to align with the **advancements in AI technology**.
 - Implement **data usage and governance policies for AI projects** with oversight and **compliance mechanisms**.
 - Mandate AI firms to appoint **compliance officers responsible for copyright protection, audits, and assessments**.
- The intersection of copyright infringement and AI can have an impact on the development of AI technology and its potential applications. Striking a balance between protecting copyright owners' rights and fostering innovation in AI is essential for the growth and advancement of the field.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Mains

Q. In a globalized world, Intellectual Property Rights assume significance and are a source of litigation. Broadly distinguish between the terms—Copyrights, Patents and Trade Secrets. **(2014)**

Khelo India University Games 2023

For Prelims: [Khelo India University Games \(KIUG\)](#), [Swamp Deer](#), [Ek Bharat Shreshtha Bharat](#), [National Educational Policy 2020](#).

For Mains: Khelo India Programme

Why in News?

Recently, the **Prime Minister** virtually inaugurated the **3rd edition of [Khelo India University Games \(KIUG\)](#)** in Lucknow, Uttar Pradesh, marking the beginning of a **new era for sports in India**.

What are Key Points about KIUG 2023?

- The **mascot of the 3rd edition of Khelo India University Games** is named **Jitu**, which represents [Swamp Deer \(Barasingha\)](#) - the state animal of Uttar Pradesh.
 - The first edition was Khelo India University Games held in **Odisha in 2020**, the second edition was held in **Bangalore, Karnataka in 2022** (shifted from 2021 to 2022 due to Covid-19 pandemic).
- The games will witness the participation of over **4750 athletes** from more than **200 Universities competing in 21 sports categories**. Competitions will take place in **Varanasi, Lucknow, Gautam Buddha Nagar, and Gorakhpur**.
- The Prime Minister also emphasised that this interaction fosters a sense of unity, promoting the spirit of ['Ek Bharat Shreshtha Bharat.'](#)

What is the Khelo India Programme?

- **About:**
 - **Khelo India, which translates to 'Let's play India'**, was proposed by the government of India in **2017 to revive India's sporting culture by engaging with children at the grassroots level**.
 - The initiative also focused on **building better sporting infrastructure** and academies across the country for various sports.
 - It is implemented by the **Ministry of Youth Affairs and Sports**.
- **Competitions Under Khelo India:**
 - Under this movement, the **Khelo India Youth Games (KIYG)**, the **Khelo India University Games (KIUG)** and the **Khelo India Winter Games** were set up as annual national sports competitions where youngsters, **representing their states and universities, respectively, showcased their skills and competed for medals**.
- **Significance:**
 - **Reviving Traditional Sports:**
 - Khelo India has played a crucial role in **restoring the prestige of India's traditional sports**.
 - The government has provided scholarships to promote and encourage [indigenous sports such as Gatka, Mallakhamb, Thang-ta, Kalaripayattu, and Yogasan](#). This initiative has helped preserve and popularise these traditional sports among the youth.
 - **Integration of Sports in Education:**

- Khelo India aligns with the proposal of the [National Educational Policy 2020](#) to incorporate sports as a subject within the curriculum and the construction of the country's first **National Sports University will further strengthen the cause.**
- **Empowering Women Athletes:**
 - Khelo India has taken significant steps towards promoting women's participation in sports through initiatives like the **Khelo India Women's League.**
 - Organised in several cities, this league has witnessed the active participation of approximately **23,000 women athletes.**
- **Centres of Excellence:**
 - Khelo India also supports the establishment of state-of-the-art sports facilities across India, called **Khelo India State Centres of Excellence (KISCE).** These centres aim to provide basic facilities for sportspersons with potential and cater to three sporting disciplines each.
 - Some of the **KISCEs** are
 - **Rajiv Gandhi Stadium, Aizawl**
 - **Kalinga Stadium, Bhubaneswar**
 - **Khuman Lampak Sports Complex, Imphal**

KHELO INDIA PROGRAMME

AIM

- Mass participation and promotion of excellence in sports
- Revive the sports culture in India at the grass-root level

12 VERTICALS OF KHELO INDIA

1. Play Field Development
2. Community Coaching Development
3. State Level Khelo India Centres
4. Annual Sports Competition
5. Talent Search and Development
6. Utilization and Upgradation of Sports Infrastructures
7. Support of National/Regional/State Sports Academies
8. Promote/Encourage children
9. Sports for women
10. Promotion of sports amongst people with disabilities
11. Sports for PwD and Development
12. Promotion of talent amongst elite athletes

GAMES UNDER KHELO INDIA

- **Khelo India Youth Games** (aka Khelo India School Games till 2019)
 - 1st edition - New Delhi (2018)
 - Age limit - 18
 - KIYG 2023 host - MP (Bhopal)
- **Khelo India University Games**
 - 1st edition - Kalinga Institute of Industrial Technology (KIIT), Odisha (2020)
 - KIUG 2023 host - UP (Lucknow, Varanasi, G.Noida and Gorakhpur)
- **Khelo India Winter Games (KIWG)**
 - 3 editions held since 2020 (in Leh, Ladakh and Gulmarg (Kashmir))

SELECTION AND ASSISTANCE

- 1000 kids elected yearly for a scholarship program, trained to become medal winners
- Talented players identified in priority sports disciplines are provided Rs. 5 Lakh p.a. for 8 years.

NODAL MINISTRY

- Ministry of Youth & Sports Affairs

HQ

- JawaharLal Nehru Stadium (New Delhi)

DRISHTI IAS

Source: PIB

petaFLOP Supercomputers

Why in News?

India is set to introduce **18 new petaFLOP supercomputers dedicated to weather forecasting, aiming to enhance the accuracy and resolution** of weather predictions.

- These state-of-the-art machines will significantly **improve forecasting capabilities** at the block level, **predict cyclones with greater accuracy and lead time**, and provide detailed **ocean state forecasts.**

What are FLOPs in computing?

- **About:**
 - **FLOPs, or Floating-Point Operations per Second**, is a **metric** used to measure **computational performance and efficiency** in [high-performance computing \(HPC\)](#) and [artificial intelligence \(AI\)](#).
 - Floating-point operations involve mathematical calculations with real numbers that have fractional parts.
 - Using floating-point encoding, extremely long numbers can be handled relatively easily.
- **Significance:**
 - FLOPs are not the sole metric to evaluate a computer's performance. Factors like **memory bandwidth, latency, and architectural features also contribute**.
 - However, FLOPs provide a baseline for comparing computational capabilities, particularly in **tasks dominated by floating-point calculations**.
- **Unit of Computing Speed:**
 - **Teraflops:**
 - It is a unit of computing speed equal to **one million million (1 trillion) (10^{12}) FLOPS**.
 - **Petaflops:**
 - It is a unit of computing speed equal to **1000 TFLOPS (10^{15})**.
 - **Exaflops:**
 - It is a unit of computing speed equal to **one billion billion (10^{18}) FLOPS**.
- **India's Current Usage of petaFLOPs:**
 - The **National Centre for Medium-Range Weather Forecasting (NCMRWF)** houses '**Mihir**,' a **2.8 petaFLOP supercomputer**, while the **Indian Institute of Tropical Meteorology (IITM)** houses '**Pratyush**,' a **4.0 petaFLOP supercomputer**.
 - These existing supercomputers, launched in 2018, will be decommissioned once the new petaFLOP supercomputers are introduced.
 - As per the agreement, NCMRWF will receive eight PFLOPs of computing power, while the remaining ten PFLOPs will be allocated to IITM, catering to their specific weather forecasting requirements.
 - India's first supercomputer called **PARAM 8000 was launched in 1991**.

Note:

- The world's fastest computer in terms of PFLOPs is the **Hewlett Packard Enterprise Frontier, or OLCF-5** with the capability to touch a **peak performance of 1,685.65**.
- **Airawat PSAI stands as India's largest and fastest AI supercomputing system**, with a remarkable speed of 13,170 teraflops.

[Source: IE](#)

XPoSat

Why in News?

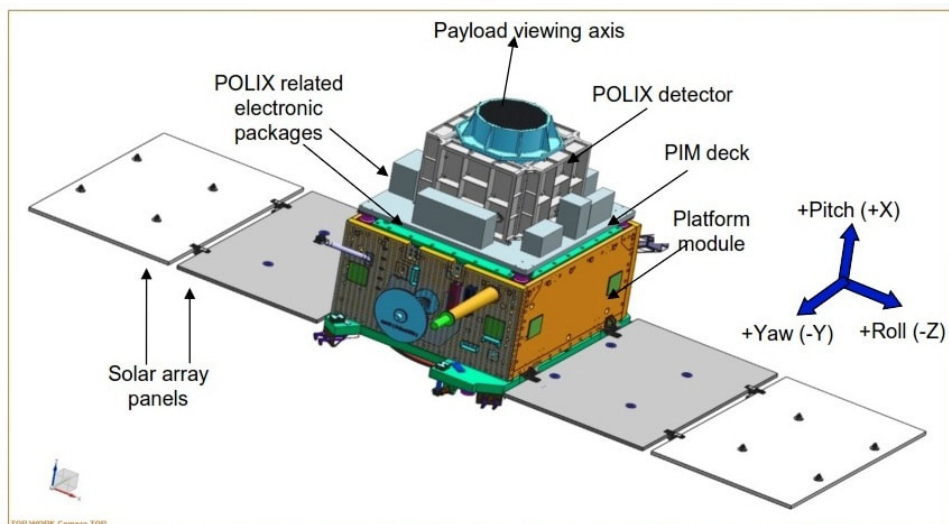
Recently, the chairman of the [Indian Space Research Organisation \(ISRO\)](#), **S Somanath**, addressed students and scientists during the '**User Meet of XPoSat**' at the **ISRO headquarters in Bengaluru**.

- He emphasised the importance of effectively utilizing data from **science-based space missions** and encouraged Indian scientific institutions to identify talented students and motivate them to work with emerging data technologies like **XPoSat**.

What is XPoSat?

▪ About:

- XPoSat stands for **X-ray Polarimeter Satellite**.
 - It is India's **pioneering polarimetry mission** aimed at studying **various dynamics of astronomical sources in extreme conditions**.
 - It is only the **world's second polarimetry mission** using X-Ray after **NASA's Imaging X-ray Polarimetry Explorer (IXPE)** that was launched in 2021.
- XPoSat is a collaboration between the **ISRO** and the **Raman Research Institute (RRI), Bengaluru, Karnataka**.



▪ Scientific Payloads of XPoSat:

- XPoSat will carry two scientific payloads: **Polarimeter Instrument in X-rays (POLIX)** and **X-ray Spectroscopy and Timing (SPECT) in a low Earth orbit**.
 - POLIX payload will enable the measurement of polarimetry parameters such as the **degree and angle of polarization** in the medium X-ray energy range of 8-30 keV photons originating from astronomical sources.
 - SPECT payload will **provide valuable timing and spectroscopic information** within the energy range of 0.8-15 keV of X-ray photons.

▪ Importance in Understanding Astronomical Sources:

- Polarimetry measurements offer an excellent diagnostic tool for comprehending the emission processes from various astronomical sources.
 - Astronomical sources, including **black holes, neutron stars, active galactic nuclei**, and **pulsar wind nebulae**, present complex emission mechanisms that challenge the current understanding.
- By **combining** polarimetric observations with **spectroscopic and timing measurements**, researchers **anticipate overcoming the limitations of the present understanding of astronomical emission processes**.

▪ Status of XPoSat:

- Testing for XPoSat is nearing completion, and the mission is in its advanced stages and is scheduled to be launched sometime in the year 2023.

Other Upcoming Missions of ISRO:

▪ **Aditya-L1:**

- India's first dedicated solar observatory mission, scheduled for June-July 2023

▪ **Chandrayaan-3:**

- A follow-up mission to Chandrayaan-2, scheduled for June 2023.

▪ **Shukrayaan-1:**

- India's first orbiter mission to Venus.

▪ **Gaganyaan Mission:**

- A manned space mission that will put astronauts 400km in orbit.

▪ **NISAR:**

- A joint Earth-observing mission between **ISRO** and [NASA](#) that will provide information on global environmental changes.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. Which of the following pairs is/are correctly matched? (2014)

Spacecraft Purpose

1. Cassini-Huygens Orbiting the Venus and transmitting data to the Earth
2. Messenger Mapping and investigating the Mercury
3. Voyager 1 and 2 Exploring the outer solar system

Select the correct answer using the code given below:

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

Ans: (b)

[Source: IE](#)

Rapid Fire Current Affairs

Night Traps of Mig-29k Onboard Vikrant

The [INS Vikrant](#), India's first Indigenous Aircraft Carrier and the most complex warship constructed by **M/s Cochin Shipyard Ltd** was commissioned into the Indian Navy in 2022, providing a significant boost to the '[Aatmanirbhar Bharat](#)' vision of the Indian government.

Currently, the Aircraft Carrier is undergoing **Air Certification and Flight Integration Trials**, involving both **Rotary Wing** and **Fixed Wing aircraft**, in order to achieve a state of full combat readiness as soon as possible.

During the ongoing trials, the first successful day landing of [MiG-29K](#) and the indigenous [Light Combat Aircraft \(LCA\)](#) aircraft was accomplished. Another historic milestone has been achieved by the Navy with the inaugural night landing of the **MiG-29K**, marking a significant accomplishment.

Bulgarian Writer Wins International Booker Prize 2023

Bulgarian writer **Georgi Gospodinov** and translator **Angela Rodel** won the [International Booker Prize](#) 2023 for **Time Shelter**. It is a **dark comic novel** about the dangerous appeal of **nostalgia**. The **50,000**

pounds in prize money is divided between the author and translator.

This is the first time a novel originally published in Bulgarian has won the annual award, given to a work of fiction translated into English and published in the United Kingdom in the preceding year.

Time Shelter has also won **Italy's Strega European Prize for literature** in Italian translation.

The **International Booker Prize** is awarded **every year** to a **translated work of fiction published in the U.K. or Ireland**. It is run alongside the **Booker Prize for English-language fiction**, which will be handed out in the autumn.

Last year's (2022) winners of the International **Booker Prize** were **Indian writer Geetanjali Shree** and **American translator Daisy Rockwell** for **"Tomb of Sand."**

PCIM&H 'e-office' and Online Portal

The **Union Minister of Ayush** visited [Pharmacopoeia Commission for Indian Medicine & Homoeopathy \(PCIM&H\)](#), and inaugurated **"e-Office portal of PCIM&H" and "Online portal"**. Online portal is for selling the softcopies of pharmacopoeial monographs.

Pharmacopoeia Commission for Indian Medicine & Homoeopathy (PCIM&H) under **Ministry of Ayush** is actively engaged in **Standardization and Quality Control of Ayurveda, Siddha, Unani and Homeopathy (ASU&H) drugs** and is publishing the standards in the form of Pharmacopoeias.

The **"e-Office portal of PCIM&H" and the "online portal"** is for selling the softcopies of pharmacopoeia monographs". The online portal will promote the **hassle-free reach of pharmacopoeia monographs** among stakeholders across the world.

UDAN 5.1, Specifically Designed for Helicopter Routes

The **Ministry of Civil Aviation** has launched **UDAN 5.1** to further enhance the **connectivity to remote areas** of the country and achieve last mile connectivity through helicopters.

For the first time under [Regional Connectivity Scheme - UDAN](#), this round is designed **specifically for helicopter routes**.

The scheme will now allow routes where **one of the origin or destination locations is in a priority area**. Earlier both points had to be **priority areas**.

Airfare caps have been reduced by **25%** to make flying in helicopters more affordable for passengers.

[Viability Gap Funding \(VGF\) caps](#) for the operators have been increased substantially for both **single and twin-engine helicopters** to enhance **financial viability** for operating the awarded routes.

The latest round of **UDAN scheme** is a testament to two emerging phenomena in Indian civil aviation: One is a deeper democratization of air travel with a focus on last-mile connectivity. Second is a growing appetite for helicopters in aiding tourism.

It may be mentioned that up to date **46 helicopter routes** have been operationalized under previous rounds of the scheme benefiting several hilly and Northeast states and this round is targeting coverage of a much larger number of routes.