

- IIT-Mandi researchers have found that **extrusion-based metal Additive Manufacturing (AM) process is cost-effective** method in comparison to other approaches in metal 3D printing.
 - ⊖ Metal AM utilises fine metal powders to construct robust, intricate components through Computer-aided design (CAD) programmes or 3D scanning.
- **3D printing (AM) uses CAD to make prototypes or working models of objects by laying down successive layers of materials** such as plastic, resin, thermoplastic, metal, fiber or ceramic.
 - ⊖ It is the **opposite of subtractive (traditional) manufacturing** which is cutting out / hollowing out a piece of metal or plastic with for instance a milling machine.
 - ⊖ **India's first 3D-printed post office was created in Bengaluru.**
 - ⊖ **Telangana unveiled world's first 3D-printed temple** at Burugupally, Siddipet district.
- **Applications of 3D Printing:** Medical and allied sector; Produce advanced aerospace components like airframes; Consumer electronics, Jewellery sector etc.
- **Benefits of 3D Printing**
 - ⊖ **Lower inventory costs due to on-demand printing.**
 - ⊖ **Reduced time and can print complex designs.**
 - ⊖ **Little or no wastage** as compared to other methods.
- In 2020, Ministry of Electronics and Information Technology released **"National Strategy for Additive Manufacturing"** to tap its potential.



Central Trade Unions (CTUs) urge Government to ratify ILO Conventions on workers' Health and Safety

- CTUs have expressed their **concern regarding** the workplace safety of workers in the light of recent **Silkyara Tunnel collapse** in Uttarakhand.
 - ⊖ CTUs are organizations that **aim to protect and promote the interests** of their members, which are **workers or employers**.
 - ⊖ **Examples:** All India Trade Union Congress (AITUC), Indian National Trade Union Congress (INTUC), **Bharatiya Mazdoor Sangh (BMS)**, etc.
- In India, workers' safety is covered under the **Occupational Safety, Health and Working Conditions Code (OSHWCC) 2020**. Few concerns with respect to the OSHWCC such as:
 - ⊖ **Size-based thresholds:** Code covers **workers employed** in establishments with at least **10 workers or more**.
 - ⊖ Bars **civil courts on hearing matters** under Code.
 - ⊖ It does not cover **all branches** of economic activity.
- **India's current status regarding ratification** of the various conventions of ILO, is as follows:

Conventions Ratified by India	Conventions not ratified by India
<ul style="list-style-type: none"> ⊖ Forced Labour Convention (No. 29) ⊖ Abolition of Forced Labour Convention (No.105) ⊖ Equal Remuneration Convention (No.100) Discrimination (Employment Occupation) Convention (No.111) Minimum Age Convention (No.138) Worst forms of Child Labour Convention (No.182) 	<ul style="list-style-type: none"> ⊖ Freedom of Association and Protection of Right to Organise Convention (No.87) ⊖ Right to Organise and Collective Bargaining Convention (No.98) C155 - Occupational Safety and Health Convention, 1981 C187 - Promotional Framework for Occupational Safety and Health Convention, 2006


Geneva, Switzerland

International Labour Organization

Established: In 1919.

About: The only tripartite U.N. agency, since 1919 the ILO brings together governments, employers and workers

Members: 187 Members India is a founding member ✓

Objective: To promote rights at work, encourage decent employment opportunities, enhance social protection and strengthen dialogue on work-related issues.

Reports: Renewable Energy and Jobs: Annual Review 2023, The road to decent work for domestic workers, etc.

(GDPIR) and Social Impact Fund (SIF)

- Both GDPIR and SIF are India led initiative, announced during **Virtual G20 Leaders' Summit**.
 - Earlier, consensus was achieved at G20 Digital Economy Working Group on **creation of a GDPIR for exchange of information and best practices**.
- GDPIR, developed by **Ministry of Electronics and Information Technology**, is a comprehensive resource hub, pooling essential lessons and expertise from G20 members and guest nations.
 - Its aim is to **bridge knowledge gap required for design, construction, deployment, and governance of DPIs**.
 - GDPIR **showcases information in a standardized format from countries** that have developed DPIs at scale, incorporating governance frameworks etc.
 - Currently, **GDPIR features 54 DPIs from 16 countries**.
- SIF is envisioned as a government led multi-stakeholder initiative to **fast-track DPI implementation in global south**.
 - India has pledged an **initial commitment of 25 million USD** to SIF. It
 - will **offer financial support** to provide technical and non- technical assistance to countries in developing DPI systems.
 - It offers a **platform for all relevant stakeholders**, to contribute to this fund and help **accelerate achievement of Sustainable Development Goals in Low- and Middle-Income Countries** through DPIs.

Digital Public Infrastructure (DPI)

- DPI is described as a **set of shared digital systems that**
 - should be **secure and interoperable**,
 - can be **built on open standards** and specifications to deliver and **provide equitable access** to public/private services and are **governed by legal frameworks to drive development, inclusion, innovation, etc.**
- Examples of DPI:** Aadhaar, UPI, DigiLocker etc.
- DPI is seen as **critical enabler of digital transformation** and is helping to improve public service delivery at scale.

World Health Organization and UN Partners launched the first Progress Report for 2021-2023 on UN Decade of Healthy Ageing 2021-2030

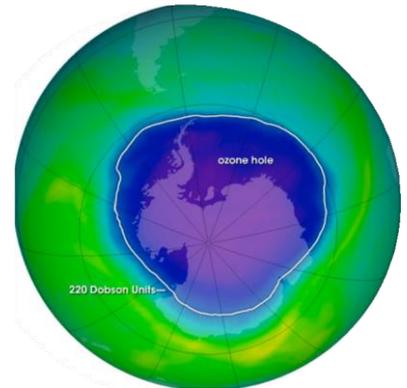
- UNDHA (2021–2030) aims to **give everyone the opportunity to add life to years**, wherever they live.
 - It is a **global collaboration** that enhances **older people's lives** and recognizes **fundamental health rights**.
 - Guiding Principle** for UNDHA (see image).
- Healthy Ageing** is developing and maintaining the **functional ability that enables well-being in older age**. It is critical for:
 - Preventing** older people from falling into **poverty**.
 - Reversing patterns** of **malnutrition** and **preventing dependence** on care.
 - Longer contribution** to society and **increasing productivity**.
 - Pursuing **gender equality**.
- Findings of report**
 - 87% of countries reported** having a policy or strategy for healthy aging in 2022, an increase **from 73% in 2020**. **Informal, unpaid carers** have insufficient support. **Only 16% of low-income countries** provide such support.
 - Resources for work towards **healthy aging remain limited**, and **more investments** are still needed.
- UNDHA targets **Four action areas for Health Ageing**
 - Changing **perspective towards age and Ageing**.
 - Communities foster the **abilities of older people**.
 - Delivering person-centred**, integrated care and primary health services **responsive to older people** **Providing access to long-term care** for older people.

Guiding principles for UNDHA

Inclusive and Universal
Leaving no one behind
Equity and intergenerational solidarity
Multistakeholder partnerships

Large Ozone holes reappear over Antarctica: Study

- As per recent study, **from 2020-22, ozone hole has grown larger and thinner** over Antarctica. Since 2004, researchers saw a **total reduction of 26% at the core of ozone hole**.
 - Ozone hole is a region of **exceptionally depleted ozone** in the **stratosphere** over Antarctic.
 - Ozone is a **highly reactive molecule formed of three oxygen atoms** found primarily in two regions of atmosphere.
- Potential drivers of ozone hole over Antarctica**
 - Changes in Antarctic **polar vortex** (Stratospheric wind pattern with a vast swirl of low pressure and very cold air, high above South Pole).
 - Aerosols** from wildfires and volcanic eruptions.
 - Changes in **solar cycle**.
 - Climate change** and increased **atmospheric abundance of Chlorofluorocarbons (CFCs)**.
- Ozone layer** is a thin shield of gas in Earth's atmosphere that protects the Earth, **absorbing the sun's ultraviolet rays**.
 - Human-made greenhouse gases** known as **Ozone-Depleting Substances (ODSs)** have been destroying the ozone layer. **Major ODSs** includes chlorine, bromine, CFCs, carbon tetrachloride, halons etc.
 - Montreal Protocol on Substances that Deplete Ozone Layer, 1987** aims to phase out production and consumption of ODSs.
 - According to United Nations Environment Programme, ozone layer is on track to **recover within four decades**.



Cooperation”

- The resolution titled “Promotion of Inclusive and Effective International Tax Cooperation at the United Nations,” was introduced by Nigeria.
- **Objective of resolution**
 - ⊕ Mandates forming a **member state-led, open-ended intergovernmental ad hoc committee** to develop a **comprehensive UN Tax Convention**.
 - ⊕ Prioritizes international tax cooperation, aiming to finalize the **UN Tax Convention by June 2025**.
- **Significance/ Need of the move**
 - ⊕ Address various issues related to **global taxation**, viz.
 - ◆ **Aggressive tax avoidance,**
 - ◆ **Illicit financial flows,**
 - ◆ **Recovery of stolen assets,**
 - ◆ **Fair taxation of the digital economy etc.**
 - ⊕ Prevent over **\$480 billion in loss in tax income** every year due to **international tax abuse**.
 - ⊕ Ends the **Organisation of Economic Cooperation and Development monopoly** in tax-related policy.
 - ⊕ Allows all countries to participate in **developing the rules**, by respecting **tax sovereignty**.
 - ⊕ **Promotes cooperation** for a fair, sustainable, **modern international tax system**.

UN General Assembly (UNGA)

- It is the main policy-making organ of the United Nations.
- It provides a forum for multilateral discussions on international issues. Each of the **193 Member States of the United Nations** has an **equal vote**.
- It makes key decisions for the UN, including:
 - ⊕ **Appointing the Secretary-General** on the recommendation of the **Security Council**
 - ⊕ **Electing the non-permanent members of the Security Council**
 - ⊕ **Approving the UN budget**.

Also in News



E-commerce cargo movement via National Waterway-1

Inland Waterways Authority of India (IWAI) and e-commerce company Amazon signed an MoU for **customer shipments** via inland waterways using the river Ganga (**National Waterway 1**).

- **Ganga (National Waterway 1)** stretch from **Haldia (Sagar)** and **Prayagraj (1620 km)**
 - ⊕ It was declared as **National Waterway-1 (NW-1)** in 1986.
- **24 waterways** are already operational to date which are planned to be increased to **more than 50 by 2047**.
- **Benefits of waterways:** cost and fuel-efficient, **environmentally friendly**.



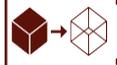
Indian Green Building Council (IGBC)

- IGBC has introduced new green rating tools as part of its **Net Zero mission** to accelerate the uptake of green building projects in country.
 - ⊕ They include **Net Zero Carbon Rating and upgraded rating systems** - Green Existing Building Rating Version 1.0, Green Factory Rating Version 2.0, and Green Campus Rating Version 1.0.
- IGBC (**HQ: Hyderabad**) was established by **Confederation of Indian Industry in 2001**.
 - ⊕ It is **India's Premier Certification Body** for Greening of Projects.
 - ⊕ **IGBC vision:** To facilitate **India emerge as a global leader in green buildings and green built environment by 2025**.
 - ⊕ IGBC is **founding member of World Green Building Council** discussing global issues at COP and similar global platforms.



DESI (Digitalisation, Education, Sustainability and Innovation) Initiative

- India and Finland hold talks on Finland's DESI initiative.
- DESI initiative is a **programme of Embassy of Finland** to strengthen preferred partnership between Finland and India.
 - ⊕ It is **Finland's first export promotion programme** with India that spans across sectors



Digital Twins

- Genesys International (3D mapping company), and **Survey of India (SoI)** announced a partnership to create **digital twins** of major cities and towns.
 - ⊕ It will **provide previously unavailable data layers**, including **high-precision 3D data**, digital terrain models, digital surface models etc.
- **Digital twin** is a **digital representation of a physical object, person, or process**, contextualized in a digital version of its environment.
 - ⊕ It can help an organization simulate real situations and their outcomes, ultimately allowing it to **make better decisions**.
- SoI is **National Mapping Agency** of country under **Department of Science & Technology**.





Investor Risk Reduction Access (IRRA) platform

- Securities and Exchange Board of India has launched IRRA platform at Bombay Stock Exchange (BSE).
- IRRA platform has been developed to **reduce risks faced by investors in eventuality of technical glitches at the trading member's end** at both the primary site and disaster recovery site.
 - ⊖ It is **available to trading members supporting internet-based trading and security trading** through wireless technology for their investors.
 - ⊖ It has been **jointly developed by all stock exchanges** – BSE, NSE, NCDEX, MCX and Metropolitan Stock Exchange of India.



Kambala Festival

- Bengaluru to host maiden **Kambala**.
- **Kambala Festival:**
 - ⊖ It is an annual **buffalo race** and is observed by the **farming community of coastal Karnataka**
 - ⊖ It begins after the **paddy harvest is done**.
 - ⊖ In **Tulu-speaking regions in South Canara districts** celebrated between November and March.
- It is **believed to be observed to commemorate Lord Kadri Manjunatha**, a manifestation of Lord Shiva, for a bountiful crop.



James Webb Space Telescope (JWST)

- **JWST took an image of the dense heart of Milky Way Galaxy** and revealed its new features.
 - ⊖ **This star-forming region** is called **Sagittarius C** and is about 300 light-years away from **Sagittarius A*** (the supermassive black hole at the galaxy's center.)
 - ⊖ It includes **protostars** - stars that are still forming and gaining mass.
- **A successor to Hubble telescope, JWST is the largest and most powerful space telescope.**
 - ⊖ It is a collaboration between **NASA, the European Space Agency and the Canadian Space Agency.**
 - ⊖ Established in **Lagrange Point 2** between the Sun and Earth, it is probing the cosmos to uncover the **history of the universe.**



Sangai Deer

- Manipur Government raised concern that Loktak Lake's hydroelectric plan may affect Sangai deer.
- **Sangai Deer**
 - ⊖ **Keibul Lamjao National Park** last natural habitat of **Sangai Deer.**
 - ⊖ IUCN Status: **Endangered**
 - ⊖ Wild Life (Protection) Act, 1972: **Schedule I**
- **Loktak Lake**
 - ⊖ It is the largest freshwater lake in **North-East India** and is famous for **Phumdis** (floating circular swamps).
 - ⊖ Loktak lake is Ramsar site.

Personality in news



Justice (Retd.) Fathima Beevi (1927-2023)

- India's first woman Supreme Court Justice Fathima Beevi passes away.
- **About Fathima Beevi**
 - ⊖ Born in **Pathanamthitta, Travancore** (present-day Kerala).
 - ⊖ In 1950, became the **first woman law graduate** to get the gold medal from Bar Council.
 - ⊖ Became a **district sessions judge in 1974** and later as a judge of **Kerala High Court in 1983.**
 - ⊖ She was **Supreme Court judge** between 1989- 1992.
 - ⊖ Served as a **member of National Human Rights Commission** and also as **governor of Tamil Nadu.**
- **Ethical values:** Courage, Honesty, Equality, etc.

