

NEWS TODAY

Software Technology Parks of India (STPI) released "From Startup to Scale Up: The Role of Digital India and Opportunities Ahead" Report

- STPI, organization under MeitY, is engaged in promoting software export and nurturing tech startup ecosystem.
- Indian start-up ecosystem is **3rd largest in world** with total of **1.14 lakhs start-ups** (as of October 2023) are recognised by DPIIT.
 - ⊖ More than 50% of them are from Tier 2 and 3 Cities.
- **Impact of Digital India (DI) on start-up ecosystem in India**
 - ⊖ India stack and JAM trinity (Jan Dhan Accounts, Aadhaar cards, Mobile numbers) created a conducive environment for start-ups to use public digital good.
 - ⊖ India's 4G infrastructure covers more than 98% population and enables larger user base for internet services by start-ups.
 - ⊖ Enablers of growth for startups due to DI include Collaborative ecosystem, Digital infrastructure, Simplified Regulatory process, etc.
- **Contribution of Startups in empowering DI**
 - ⊖ Start-ups power Digital India with job opportunities, empowered skills and digital solutions for inclusive growth.
 - ⊖ Start-ups have directly and indirectly interacted with pillars of DI (refer box), leveraging technology, empowering communities, and driving innovation.
- **Emerging areas for Startups**
 - ⊖ Government Infrastructure initiatives like Open Network, Incubation centres, etc.
 - ⊖ Tapping rural market potential: Online marketplace, formalisation of industries etc.
 - ⊖ Technological trends: App-ification, Advanced computing technologies etc.

Digital India Programme

- ⊖ Launched in 2015 by MeitY to transform India into a digitally empowered society and knowledge economy.
- ⊖ It boosts businesses and start-ups through its focus on three core components: Digital infrastructure, e-governance, and Universal digital literacy.

Pillars	Nodal dept. in-charge
Broadband Highways	MeitY & DoT
Universal Access to Mobile Connectivity	DoT & Dept. of Posts
Public Internet Access	MeitY
e-Governance	MeitY
e-Kranti	MeitY
Information for All	MeitY
Electronics Manufacturing	MeitY
IT for Jobs	MeitY & DoT
Early Harvest Programmes	MeitY and other depts.

Global Landscape of Climate Finance 2023 report released by Climate Policy Initiative

- Climate finance refers to financing, from public, private, and alternative sources, that seeks to support mitigation and adaptation actions to address climate change.
 - ⊖ Mitigation tackles the causes of climate change, whereas adaptation tackles the effects of climate change.
- **Key highlights of the report**
 - ⊖ Average annual climate finance flows reached almost USD 1.3 trillion in 2021/2022, nearly doubling than the previous year.
 - ⊖ China, the US, Europe, Brazil, Japan, and India received 90% of increased climate finance.
 - ⊖ Climate finance is uneven across sectors, energy and transport continue to attract the majority of flows:
 - ⊖ Private actors provided 49% of total climate finance.
 - ⊖ Adaptation finance continues to lag, with 98% coming from the public sector.
- **Recommendations**
 - ⊖ Reforming international financial institutions, with rules, and incentives aligned with climate needs.
 - ⊖ Leveraging concessional finance to expand private flows.
 - ⊖ Mainstreaming climate adaptation and resilience into financial systems
 - ⊖ Phasing out unabated fossil fuels through a just transition
 - ⊖ Making climate finance data widely available and accessible.
 - ⊖ Work across countries to harmonize and enhance interoperability.

Global Climate finance mechanisms

- ⊖ **Global Environment Facility** (established in 1992 Rio Earth Summit): It is a unique partnership of 18 agencies working with 183 countries to address the world's most challenging environmental issues.
- ⊖ **Adaptation Fund**, established in 2001 to finance concrete adaptation projects and programmes in developing countries Parties to the Kyoto Protocol.
- ⊖ **Special Climate Change Fund (SCCF)**, was established in 2001 to finance projects relating to: adaptation; technology transfer and capacity building; energy, transport, etc.
- ⊖ **Least Developed Countries Fund (LDCF)**, was established to support a work programme to assist Least Developed Country Parties in carrying out the preparation and implementation of national adaptation programmes of action (NAPAs).
- ⊖ **Green Climate Fund** (established under the Cancún Agreements in 2010), is mandated to support developing countries in raising and realising their Nationally Determined Contributions (NDC) ambitions.

Scientists have discovered the oldest black hole dating back to 470 million years after the Big Bang

- This black hole is about 13.2 billion years old, as the universe itself is 13.7 billion years old.
 - NASA's James Webb Space Telescope and Chandra X-Ray Observatory were used to make observations with the gravitational lensing technique in the galaxy named UHZ1.
 - ⊖ Gravitational Lensing occurs when massive objects distort and magnify light from objects behind them, acting as cosmic telescopes and making distant galaxies appear brighter.
 - **About Black hole in galaxy UHZ1**
 - ⊖ It is a supermassive black hole almost ten times bigger than black hole (Sagittarius A*) in our galaxy.
 - ⊖ It weighs anywhere from 10% to 100% of the mass of all the stars in its galaxy.
 - ⊖ It is considered a quasar since it's actively growing and the gas is very bright.
 - **Black hole** is a place in space where gravity pulls so much that even light cannot get out.
 - ⊖ They are formed when massive stars die or there is a direct collapse of gases.
 - **Significance of studying black hole**
 - ⊖ To understand how matter behaves in extremely strong gravitational fields
 - ⊖ To understand how fast the universe is expanding and how it has evolved.
- **Chandra X-Ray Observatory:** It is a telescope deployed in 1999 and designed to observe X-rays from high-energy regions of the universe, such as the remnants of exploded stars.
 - **James Webb Telescope:** Launched in 2021 in the second Lagrange point or L2 (1 million miles away from the Earth).
 - ⊖ It is the most powerful astronomical observatory ever sent into space, it sees the universe in the infrared.

Bihar's caste and economic survey report tabled in state legislature

- The report describes the economic condition of 215 Scheduled Castes, Scheduled Tribes, Backward Classes, and Extremely Backward Class.
- **Revelations of survey**
 - ⊖ One in three families in Bihar is living in poverty, with a monthly income of Rs 6,000 or less
 - ⊖ More than 50 lakh people of Bihar are living as immigrants in other states.
- **Need for caste-based census:** latest data for policy making, identifying the poor and ailing sections, altering and improvising the reservation parameters, etc.
- **Concerns associated with caste-based census:** it can strengthen caste divisions and perpetuate the caste system, difficulty in defining caste, etc,
- **History of Caste Census in India**
 - ⊖ The process of Census began in 1872 (Non-synchronous) and all the Censuses till 1931 had various details with regard to specific regions, communities, castes, and economic groups and measured the progress of households in India.
 - ⊖ In 1941, caste-based data was collected but not published.
 - ⊖ Every Census in independent India from 1951 to 2011 has published data on Scheduled Castes and Scheduled Tribes, but not on other castes.
 - ⊖ The SECC was conducted in 2011 by the Centre but its results were withheld.

World Health Organisation released Global Tuberculosis (TB) Report, 2023

- **Key findings: Global**
 - ⊖ Reported global number of people newly diagnosed with TB was 7.5 million in 2022.
 - ⊖ TB remained the world's second leading cause of death in 2022 after COVID-19.
 - ⊖ Net reduction of TB incidence from 2015- 2022 was 8.7% far from WHO End TB Strategy milestone of 50% reduction by 2025.
 - ⊖ Only about 2 in 5 people with drug resistant TB accessed treatment in 2022.
 - **India's findings**
 - ⊖ India, Indonesia and Philippines collectively account for nearly 60% of reduction in number of people newly diagnosed with TB in 2020- 2021.
 - ⊖ India has 27% of world's TB cases.
 - TB is caused by bacillus Mycobacterium tuberculosis which most often affects lungs (pulmonary TB).
 - ⊖ Most common medications to treat TB include isoniazid, rifampin, ethambutol, pyrazinamide etc.
 - ⊖ Currently, Bacille Calmette-Guerin is only licensed vaccine available for TB prevention.
 - ⊖ Spreads from person to person through air.
 - ⊖ **TB Risk factors:** Diabetes, HIV infection, Undernutrition, tobacco use.
 - **Steps taken to prevent Tuberculosis**
 - ⊖ National Strategic Plan for Tuberculosis Elimination 2017-2025.
 - ⊖ TB Mukta Panchayat Abhiyan Initiative.
 - ⊖ Nikshay Poshan Yojana for nutritional support to TB patients.
- Drug-Resistant TB**

 - ⊖ **Multidrug Resistance TB (MDR):** Resistant to at least isoniazid and rifampicin.
 - ⊖ **Extensively drug-resistant tuberculosis (XDR-TB):** Resistant to isoniazid and rifampin, plus any fluoroquinolone and at least one of three injectable second-line drugs.
 - ⊖ **Totally drug-resistant tuberculosis (TDR-TB):** Resistant to all first- and second-line TB drugs.

Directions Regulating Firecrackers Apply To All States in Country: Supreme Court

Supreme Court clarified that its 2021 directions against use of barium and banned chemicals in firecrackers are now applicable across country to curb air and noise pollution during festive periods.

In 2021, SC stated that there is no total ban on use of firecrackers, and that only those firecrackers were banned that contained barium salts.

Green crackers are permissible following the directions issued by Supreme Court in 2018.

They cause 30% less air pollution and don't contain hazardous elements like barium nitrate. Toxic metals in traditional crackers are replaced with less hazardous compounds.

Council of Scientific and Industrial Research developed green crackers namely

- ◆ **SWAS (safe water releaser)** suppresses dust released by releasing water vapour in air.
- ◆ **STAR (safe thermite cracker)** does not comprise potassium nitrate and sulphur, emits reduced particulate matter disposal and reduced sound intensity.
- ◆ **SAFAL** has minimum usage of aluminium, and used magnesium instead.

Initiatives taken to control Air and Noise Pollution

- ⊖ **National Clean Air Programme:** To achieve 40% reduction in concentrations of PM10 by 2025-26.
- ⊖ **Graded Response Action Plan** for Delhi.
- ⊖ **Noise Pollution (Regulation and Control) Rules, 2000** reduces noise levels at night by restricting firecrackers, loud speakers etc.

Hazardous & toxic nature of ingredients used in firecrackers	
Compound	Effects
Aluminium	Contact dermatitis, bioaccumulation
Sulfur Dioxide	Acid rain from sulphuric acid affects water sources, vegetation & causes property damage.
Potassium Nitrate	Toxic dusts, carcinogenic sulfur-coal compounds
Perchlorate - Ammonium & Potassium	Can contaminate ground & surface waters, can cause thyroid problems in humans & animals
Barium Nitrate	Poisonous. Fumes can irritate respiratory tract.
Copper compounds	Polychlorinated dioxins and di-benzofurans. Can bio-accumulate. Cancer risk.
Antimony sulfide	Toxic smoke, possible carcinogen
Lead Dioxide / Nitrate / Chloride	Bio-accumulation, developmental danger for kids & unborn babies, may remain airborne for days, poisonous to plants & animals
Lithium compounds	Toxic and irritating fumes when burned
Mercury (Mercurous chloride)	Toxic heavy metal. Can bio-accumulate.
Nitric oxide	Toxic by inhalation. Is a free radical
Nitrogen dioxide	Highly toxic by inhalation.
Ozone	Greenhouse gas that attacks & irritates lungs
Arsenic compounds	Toxic ash can cause lung cancer, skin irritation and wart formation.
Strontium compounds	Can replace calcium in body. Strontium chloride is slightly toxic.

Also in News

International Organization for Migration (IOM)

IOM has reported that around 6.9 million people are internally displaced in the Democratic Republic of Congo.

 **International Organization for Migration** 

Genesis: Established in 1951 as the **Provisional Intergovernmental Committee for the Movement of Migrants from Europe (PICMME)**. It was renamed as IOM in 1989.

About: It is the leading intergovernmental organization in the field of migration. IOM is part of United Nations system, as a related organization.

Functions: The IOM works on areas of migration management: migration and development, facilitating migration, regulating migration, and addressing forced migration.

Members: It consists of **175 Member states (Including India)** and 8 observer states. 

Pralay missile

- India successfully test-fire Pralay missile.
- **About Pralay Missile**
 - ⊖ Developed by **Defence Research and Development Organisation** for deployment along Line of Actual Control and Line of Control.
 - ⊖ **Range: 350-500 km Short-Range Ballistic Missile (SRBM).**
 - ⊖ **Type:** Surface-to-surface missile.
 - ⊖ **Payload capacity:** 500-1,000 kg.
 - ⊖ It is a **solid-fuel**, battlefield missile based on **Prithvi Defence Vehicle**.
 - ⊖ It has **ability to change its path** after covering a certain range mid-air.
 - ⊖ It is as powerful as **Russian "Iskander"** and **China's "Dong Feng 12"**.
 - ⊖ **India's other SRBMs:** Prithvi I, Prithvi II etc.



Solar flares

- Aditya L1's payload named High Energy L1 Orbiting X-ray Spectrometer (HEL10S) has captured first glimpse of solar flares.
- Solar flare is an intense burst of radiation coming from release of magnetic energy from Sun.
 - ⊖ These are solar system's largest explosive events.
 - ⊖ They tend to originate from regions of solar surface that contain sunspots – darker, cooler portions of solar surface where magnetic fields are particularly strong.
 - ⊖ They can disturb the Earth's ionosphere, which in turn disturbs radio communications.
 - ⊖ They produce enhanced emission in wavelengths across electromagnetic spectrum - radio, optical, UV, soft X-rays, hard X-rays and gamma-rays.



Geoglyph

- A 3,000-year-old Iron Age Geoglyph circle was discovered in Telangana.
- Geoglyphs are a form of prehistoric rock art, created on the surface of laterite plateaus.
- They are made by removing a part of the rock surface through an incision, picking, carving or abrading.
- The mostly contains depictions of various plants, animals, geometric shapes, abstract patterns, and also intersecting lines
- Nazca lines (Peru), Atacama Giant (Chile), Blynthe Intaglios (USA) are some of the famous Geoglyphs of the world
- In India, Geoglyphs are mostly found in the Konkan region of Maharashtra and Goa.



Timed out in Cricket

- Recently, a batter had to walk back before facing a single ball after he was timed out, for the first time in international cricket across all formats.
- As per the International Cricket Council's playing conditions for World Cups, the new batter must be ready to face the bowler within two minutes of the fall of the previous wicket.
- As per protocol, the TV umpire starts the clock immediately at the fall of the previous wicket



Euclid Mission

- Euclid mission shares its 1st full-color images of the universe.
- Euclid mission is built and operated by European Space Agency and was launched in 2023.
 - ⊖ It is a cosmology survey mission, optimised to determine the properties of dark energy and dark matter on universal scales.
 - ⊖ It'll make a 3D-map of Universe by observing billions of galaxies out to 10 billion light-years, across more than a third of sky.
 - ⊖ It will orbit Lagrange point 2 (L2).
 - ⊖ Mission Lifetime: 6 year.
 - ⊖ It'll take images in optical and near-infrared light.



Pauradhvani program

- It is a program organized by the Kerala State Literacy Mission (KSLM) in eight coastal and tribal districts.
- It aims to instill scientific aptitude, independent thinking, secularism, democratic spirit, and awareness about rights towards shaping independent citizens.
- The program has a six-point motto, which includes ensuring the rights of the marginalized sections, strengthening democracy and brotherhood, and building an egalitarian new Kerala society without any discrimination.
- Among the topics to be covered under the program include the Independence struggle and tribespeople, forest rights, etc.



Treaty on Conventional Armed Forces in Europe (CFE)

- NATO announced the formal suspension of the treaty in response to Russia's pullout from the treaty.
- It was signed in 1990.
- Treaty set equal limits on the number of tanks, armored combat vehicles, heavy artillery, etc. that NATO and the Warsaw Treaty Organization could deploy between the Atlantic Ocean and Ural Mountains.
 - ⊖ Warsaw Treaty Organization (also called Warsaw Pact) was a political and military alliance established in 1955.
 - ◆ It was between Soviet Union and several Eastern European countries disbanded in 1991.

Personality in news



Chandrasekhara Venkata (CV) Raman (1888-1970)

- Nation celebrates 135th birth anniversary of CV Raman on 7th November.
- Born at Tiruchirappalli, Tamil Nadu, he founded
 - ⊖ Indian Journal of Physics.
 - ⊖ Indian Academy of Sciences, registered as Society under Societies Registration Act in 1934.
- Won Nobel Prize in Physics in 1930 and Awarded Bharat Ratna in 1954.
- National Science Day is celebrated every year to commemorate his discovery of Raman Effect.
- Raman Effect: A phenomenon when a stream of light passes through a liquid, a fraction of light scattered by liquid is of a different colour.
 - ⊖ This happens due to change in wavelength of light that occurs when a light beam is deflected by molecules.
- Ethical Values: Scientific rigour, Fortitude, Excellence, Honesty of purpose.



AHMEDABAD



BHOPAL



CHANDIGARH



DELHI



JAIPUR



JODHPUR



GUWAHATI



HYDERABAD



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI



SIKAR