

NEWS TODAY

UNITED NATIONS POPULATION FUND INDIA (UNFPA) RELEASED INDIA AGEING REPORT 2023

- Report was prepared in collaboration with **International Institute for Population Sciences (IIPS)**.
- **Elderly population** is usually defined as people with age **above 60 or 65 years old**.
- **Key highlights of report**
 - > Three key demographic changes - **declining fertility, reduction in mortality and increasing survival at older ages** - contribute to population ageing.
 - > Globally, there are **1.1 billion persons aged 60 years or above** in 2022.
 - > By 2046, **size of elderly population in India** will be **higher** than that of **children aged 0-14**.
 - > By 2050, **share of older persons will double to 20.8%** in India.
- **Challenges faced by elderly**
 - > Women living longer than men (**feminization**) resulting in **higher levels of widowhood** and associated **socio-cultural and economic deprivations** and dependencies.
 - > High proportion (71 %) of older persons lives in rural areas, thus facing issues like **income insecurity, lack of access to adequate and quality health care and isolation**.
- **Recommendations:** Use of community based organisations in bridging gaps in implementing government schemes, deeper collaboration with private sector, disaster preparedness for elderly, etc.
- **Initiative taken for elderly people:** Pradhan Mantri Vaya Vandana Yojana, Atal Pension Yojana, National Policy on Older Persons 1999, Atal Vayo Abhyuday Yojana etc.

- **UNFPA** is United Nations sexual and reproductive health agency established in 1969.
- **IIPS Mumbai**, formerly known as Demographic Training and Research Centre (DTRC) till 1970, was established in 1956. It is under administrative control of **Ministry of Health and Family Welfare**.

MIT RESEARCHERS DEVELOPED A NEW QUBIT CIRCUIT THAT MAY ENHANCE THE ACCURACY OF QUANTUM COMPUTERS

- Researchers used a **special coupling element** between **two fluxonium qubits** to solve the quantum error.
 - > **Fluxonium** is a relatively **new type of superconducting qubit**.
 - > It can have a lifespan that is much longer than more **commonly used superconducting qubits**.
- Their architecture **suppresses unwanted background interactions** that can introduce errors into quantum operations.
 - > Today's **quantum computers are not robust enough** to realize such error **correction at commercially relevant scales**.
- **Quantum computing**
 - > Quantum computing harnesses the **laws of quantum mechanics** to **solve problems too complex for classical computers**.
 - > **Qubit** (quantum bits) is the **basic unit of information** in quantum computing.
 - **Classical bits** can have the **value 0 or 1 at one time** but **Qubit** can have **0 and/or 1 at the same time**.
 - > It utilises **two key principles of quantum physics**:
 - **Superposition** means each qubit can represent both 1 and 0 at the same time.
 - **Entanglement** means that **qubits in a superposition can be correlated with each other**; i.e., the state of one (either 1 or 0) can depend on the state of another.
 - > **Initiative in India:** National Mission on Quantum Technologies & Applications.

INDO-BANGLA CONSENSUS ON NEED TO HIGHLIGHT CLIMATE IMPACT, LOSS & DAMAGE IN SUNDARBANS GLOBALLY

- Experts from India and Bangladesh believe that climate change triggered **loss and damage in the Sundarbans**, should be seen as a "global commons".
 - > This is because the region gets **significantly affected despite contributing minimally to carbon emissions**.
- **Global commons** are areas and their potential economic resources that **lie beyond national jurisdiction** (high sea, atmosphere, Antarctica and outer space) and to which all nations have access.
 - > **Conventions and treaties to govern global commons** include United Nations Convention on Law of the Sea (UNCLOS) 1982, Antarctic Treaty System, Treaty on Principles governing Activities of States in Exploration and Use of Outer etc.
- Sundarbans is a **cluster of low-lying islands in Bay of Bengal**, spread across India (40%) and Bangladesh (60%).
 - > It lies on the delta of the **Ganges, Brahmaputra and Meghna rivers**. It is the **largest area of mangrove forest** in the world.
 - > It is designated as a **Cultural UNESCO World Heritage Site** and accorded the **status of 'Wetland of International Importance'** under Ramsar Convention.
 - > **Fauna:** Estuarine crocodile, royal Bengal tiger, Water monitor lizard, Gangetic dolphin, Olive ridley turtle etc.
 - > **Threats:** Vulnerable to floods, earthquakes, cyclones, sea-level rise and coastline erosion.

Loss and Damage

- It is a term used to describe how climate change is already causing serious and, irrevocable impacts around the world – particularly in vulnerable communities.

TRAI RELEASES CONSULTATION PAPER ON “REGULATION ON RATING FRAMEWORK FOR DIGITAL CONNECTIVITY IN BUILDINGS OR AREAS”

- The framework will improve the **Quality of Service (QoS) for digital connectivity inside buildings.**
- **Need for rating framework**
 - **Rising proportion of data consumed inside buildings** with respect to the outside because of new norms like work-from-home.
 - **Coverage and quality of digital connectivity inside buildings** remains a major issue requiring a new regulatory approach.
 - **To identify** new entities like **Digital Connectivity Infrastructure Providers.**
- **Key highlights**
 - **Legal backing:** Provisions for rating of buildings for Digital Connectivity should be included in the **Model Building Bye-Laws.**
 - **Eligibility for rating:** Buildings of a **built-up area of more than 5000 Sq. Meter** or as mandated under any law or on a voluntary basis.
 - **Mandatory rating**
 - **All new and existing buildings of public importance:** Airports, Ports, Railway/ metro/bus stations, etc.
 - **Other new buildings,** excluding the class of buildings as may be decided by MoHUA.
 - **Voluntary rating:** Buildings not included in the mandatory rating category can also be rated.
 - **Responsibilities of TRAI**
 - Empanelment of **Rating Agencies,**
Creation of a digital portal to facilitate building ratings.
 - **Formulation of terms and conditions** including validity period for using **Rating certificate.**
 - **Monitoring and Awareness** campaigns.

Existing framework for rating of building for Digital connectivity

- **WiredScore certification:** It is an independent digital connectivity benchmark and workingl.
- **Europe’s Smart Readiness Indicator (SRI)** for rating the smart readiness of Buildings.
- **SPIRE rating framework** assesses smart buildings holistically.

TRAI RELEASES CONSULTATION PAPER TO FACILITATE DEMAND GENERATION IN TERA HERTZ RANGE (THR)

- THR is **region of electromagnetic spectrum** in range of **100 GHz to 10 THz** (between millimetre and infrared frequencies).
 - It lies on the **cusp of electronics and photonics.**
 - Region on frequency spectrum where **electronic and photonics technologies do not meet** is called the **Terahertz gap (0.3 to 30 THz).**
 - It is also referred to as a **sub-millimetre, far-infrared, and near-millimetre wave.**
- **Properties of THR**
 - **Penetration:** THz waves have **less scattering and better penetration depths** against infrared waves.
 - Therefore, **dry, and non-metallic materials,** which are opaque in the visible spectrum, **are transparent THR.**
 - **Resolution:** Gives a better spatial imaging resolution as THz waves have **shorter wavelengths** against microwaves.
 - **Safety:** THz **radiation is non-ionizing** and their photon energies are much lower than X-ray.
- **Applications of THz**
 - **Space-based communication** like Earth Exploration-Satellite Service (EESS), radio astronomy service, etc.
 - **Short-range** wireless communication.
 - **Security applications** (like solid explosive material detection).
 - **Biomedical imaging** and body surface diagnoses.
- **Challenges in Developing Technologies for THz Band:**
 - Lack of **efficient, coherent, and compact THz sources and detectors.**
 - THz waves **exhibit high losses** due to high atmospheric absorption.
 - Their **signal degradation is considerably more** partly because the water molecules resonate in this range.

SUPREME COURT ISSUES DIRECTIONS TO CENTRAL & STATE GOVERNMENTS TO ENSURE EFFECTIVE IMPLEMENTATION OF HIV & AIDS (PREVENTION AND CONTROL) ACT, 2017 (HIV ACT)

● Key provisions of HIV Act

- **Prohibits discrimination or unfair treatment** of HIV-infected people on any grounds including denial of healthcare services, right of movement, right to reside, purchase, rent or occupy property and hold public or private office etc.
- No person shall be compelled to disclose his HIV status except with his informed consent, and **if required by a court order**.
- Centre and State shall take measures for **providing diagnostic facilities** relating to HIV or AIDS and **Anti-Retroviral Therapy (ART) and opportunistic infection management** to all HIV-infected people.

● SC outlined following directives

- **Centre to frame Guidelines within three months** for concerning diagnostic facilities, ART and Opportunistic Infection Management.
- Formulate **IEC (Informational, Educational, and Communicational) Programs** related to HIV and AIDS.
- Formulate **rules for Compliance Oversight within 8 weeks** and a **Complaints Officer** should be designated to address violations.

● Human Immunodeficiency Virus (HIV) is a virus that weakens a person's immune system by destroying important cells that fight disease and infection.

- **If HIV is not treated, it can lead to AIDS (Acquired Immune Deficiency Syndrome).**

Initiatives to control HIV-AIDS

- **National AIDS Control Program (NACP).**
- **NACO** (under Ministry of Health and Family Welfare) as nodal agency for activities of NACP.
- **National Strategic Plan 2017-24** and **Mission SAMPARK** for tracing under ART services.

ALSO IN NEWS



Sarna code

- Jharkhand Government is seeking recognition of Sarna religious code for tribals.
- Sarna followers are **nature worshippers who do not consider themselves Hindus** and have been **fighting for a separate religious identity** for decades.
 - So far, the census surveys have included them as "others" in the religion column.
 - Believers of Sarna faith **do not practice idol worship, nor do they adhere to the concept of the Varna system, heaven-hell, etc.**
 - Holy grail of Sarna faith is "**Jal (water), Jungle (forest), Zameen (land)**" and its followers pray to trees and hills.



TRAI

TRAI released Draft Telecommunication Mobile Number Portability (Ninth Amendment) Regulations, 2023

- TRAI has proposed changes to **Mobile Number Portability (MNP) rules** to prevent SIM-swap fraud.
- **Need for changes:** Mobile connections are being fraudulently ported out by criminals/ fraudsters by way of fraudulent SIM Swaps/ replacement.
- **Suggested changes**
 - Telcos will need to check if **the request is coming from a number that has undergone a SIM swap 10 days** prior to the request to port.
 - In such cases, **unique porting code** for the request would not be allocated.
 - Donor operator (network from which customer is porting out) to send the **demographic details of customer seeking MNP** to porting operator (network to which the customer is porting).



Methane

- **Food and Agriculture Organisation (FAO)** released a report on **Methane emissions in livestock and rice systems.**
- **Methane is colorless, odorless and tasteless greenhouse gas (GHG).**
 - It is the **2nd most prevalent GHG emitted by human activities.**
 - Methane emissions from anthropogenic activities contribute about **0.5 degrees rise to observed global warming.**
 - **Its Global Warming Potential (GWP) is 27-30 over 100 years** (CO₂'s GWP is 1).



Green Ammonia

- **Green Ammonia from, Egypt imported through VOC Port, Tamil Nadu for the first time.**
- **Green ammonia** is made using **100% renewable and carbon-free source.**
 - **Blue Ammonia**, refers to the ammonia for which **by-product CO₂ has been captured and stored**, reducing climate impact.
 - **Grey/Brown Ammonia** refers to the **ammonia produced using fossil fuels.**
- **Ammonia (NH₃) is a pungent gas** widely used to make fertilisers.
 - Produced through **Haber-Bosch process** in which hydrogen and nitrogen are reacted together at **high temperatures and pressures.**
 - Ministry of Power has **notified Green Ammonia Policy in 2022.**



 <p>Lough Neagh</p>	<ul style="list-style-type: none"> The demand has been made in the UK to bring the Lough Neagh lake under Public Ownership. It is a Ramsar Site and the largest freshwater lake in the UK. <ul style="list-style-type: none"> It is also home to the largest commercial wild eel fishery in Europe. Lake is facing threats due to blue-green algal bloom (due to Cyanobacteria) caused by: Rising water temperature <ul style="list-style-type: none"> Invasive species (Zebra Mussels) and Eutrophication (water runoff having excess nutrients from fertiliser).
 <p>Conocarpus trees</p>	<ul style="list-style-type: none"> It is an invasive mangrove species, recently banned by Gujarat government. Earlier, Telangana government had also banned it. Conocarpus is a genus of two species of flowering plants in family of Combretaceae, native to tropical regions of the world. <ul style="list-style-type: none"> It is widely used in public spaces for its ornamental looks. Flowering in this tree takes place in Winter and the particles spreading from it causes cold, coughing, asthma, allergy etc. harms to human beings nearby. Roots of this species go deep inside soil and develop extensively, damaging telecommunication lines, drainage lines and freshwater systems.
 <p>World University Rankings 2024</p>	<ul style="list-style-type: none"> The ranking by Times Higher Education includes 1,904 universities across 108 countries. Key findings <ul style="list-style-type: none"> University of Oxford (UK) is listed as the best University in the world. Around 91 Indian Universities have found a place on the list (in 2023 it was 75). Indian Institute of Science (IISc) Bangalore placed in 201-250 bracket topped the list of Indian Universities. 4 Indian universities are placed in 501-600 bracket (Anna University, Jamia Millia Islamia, Mahatma Gandhi University and Shoolini University). India is the 4th most well-represented nation in the 2024 rankings (6th in 2023).
 <p>Atal Pension Yojana (APY)</p>	<ul style="list-style-type: none"> Pension Fund Regulatory and Development Authority (PFRDA) has requested the government to increase the guaranteed pension amount under APY. APY is a flagship social security scheme launched under Ministry of Finance. <ul style="list-style-type: none"> It, replaced Swavalamban scheme, provides minimum guaranteed pension for people in unorganized sector to all bank account holders in age group of 18 to 40 years. Subscriber would receive guaranteed minimum monthly pension of Rs 1,000 to Rs 5,000 per month after attaining age of 60 years, depending on contribution. It is administered by PFRDA under National Pension System.
 <p>Packaging of food products</p>	<ul style="list-style-type: none"> Under Food Safety and Standards (Packaging) Regulations, 2018 use of newspapers or similar materials for storing and wrapping food is strictly prohibited. Newspapers are often subjected to various environmental conditions during distribution, making them susceptible to contamination by bacteria, viruses or other pathogens. The ink used in newspaper printing may cause cancer, liver failure, lung damages, etc. due to: <ul style="list-style-type: none"> components such as Lead, Naphthylamines aromatic hydrocarbon, and Agonists for AhR (aryl hydrocarbon receptor). <ul style="list-style-type: none"> AhR is a protein that mediates toxicity.
 <p>micorRNA (miRNA)</p>	<ul style="list-style-type: none"> A recent study in US showed a miRNA called 'let-7' is crucial for fighting cancer. miRNAs are small, highly conserved non-coding RNA molecules. <ul style="list-style-type: none"> mRNA is a type of single-stranded RNA involved in protein synthesis. RNA (Ribonucleic acid) carries genetic information that is translated by ribosomes into various proteins necessary for cellular processes. It controls gene expression by binding target mRNA (messenger RNA) to prevent protein production. It is found in most eukaryotes, including humans. miRNA account for 1-5% of the human genome and regulate at least 30% of protein-coding genes.
 <p>Neanderthals</p>	<ul style="list-style-type: none"> Researchers have found that humans carry DNA remnants of ancient Neanderthals. Neanderthals were humans. They were a distinct species called Homo neanderthalensis. <ul style="list-style-type: none"> They lived in Europe and southwest and central Asia during middle to late Pleistocene Epoch, about 400,000 to 40,000 years ago. Physical Appearance: Long, low skull (compared to more globular skull of modern humans) with a characteristic prominent brow ridge above their eyes, relatively short and stocky bodies (suited to cold environments). They were skilled toolmakers and used a technology called Mousterian culture which involved the creation of various stone tools like scrapers, points, and hand axes.