

# My Notes....

## NATIONAL

### NITI AAYOG'S HEALTH INDEX 2019-20

**Kerala, Tamil Nadu, Telangana, Andhra Pradesh and Maharashtra** have topped the **NITI Aayog's 2019-20 health index** among larger states while **Uttar Pradesh** is the worst performer and stood at the bottom of the index with **Uttarakhand, Rajasthan, Madhya Pradesh and Bihar** being other four laggard states at the bottom.

#### As per report

1. Among the smaller states, **Mizoram ranked at the top** and **Nagaland at the bottom** in 2019-20 while three of the smaller states, **Mizoram, Sikkim and Meghalaya**, improved their rankings from **base year (2018-19)** to **reference year (2019-20)**.
2. Among the **union territories, Daman & Diu and Dadra and Nagar Haveli and Chandigarh secured first and second** ranks respectively in terms of overall performance in 2019-20 while **Daman & Diu and Dadra and Nagar Haveli, Lakshadweep, Delhi and Jammu & Kashmir** have improved in 2019-20 compared to the **base year of 2018-19**.
3. The decision of the ministry of health and family welfare to link **the index to incentives under the National Health Mission (NHM)** has been instrumental in shifting the focus from budget spends, inputs and outputs to outcomes by shining the light on states/UTs that have shown most improvement.
4. The **Health Index** is a **useful tool to measure and compare** the overall performance and incremental performance across states and UTs over time and nudging the states and UTs to shift the focus from **inputs and outputs to outcomes**.

#### About the report

1. The report has been done by **NITI Aayog** in collaboration with the **ministry of health and family welfare** and the **World Bank**.
2. The index is a weighted composite score incorporating **24 indicators** on health performance largely in three domains of a) **Health Outcomes**; (b) **Governance and Information**; and (c) **Key Inputs and Processes**.
3. The indicators are selected from existing data sources such as the **Sample Registration System (SRS), Civil Registration System (CRS) and Health Management Information Systems (HMIS)**.
4. From the **base year (2018-19)** to the **reference year (2019-20)**, **Uttar Pradesh** led in improving the performance of **33 out of 43 indicators** and sub-indicators.

### PARLIAMENT PASSES NDPS (AMENDMENT) BILL

The **Parliament** on 20 December 2021 passed the **Narcotic Drugs and Psychotropic Substances (NDPS) (Amendment) Bill, 2021**, which aims at correcting "**drafting errors**" in the **NDPS Act, 1985**. Finance Minister, introducing the bill, said there was "**no reason to oppose**" it as it simply seeks to rectify "**clerical errors**" in the existing law. The bill will **replace an ordinance** that the government promulgated in September.

### The amendment

1. The **NDPS Act, 1985**, regulates the **manufacture**, transport and consumption of **narcotic drugs and psychotropic substances**.
2. **In 2014**, the Act was amended and the clause number of the definition of “**illicit activities**” changed.
3. The Act mentions **certain illicit activities** such as **cultivating cannabis** or **manufacturing narcotic drug**.
4. However, the section on penalties for financing such **activities was not changed**, so it continued to refer to the earlier clause number of the definition.
5. The matter came up before the **Tripura High Court**, when an accused pointed out that the penalty section referred to a blank list. In June this year, **the court asked the government to amend the law**.
6. On 30 September this year, **the government promulgated an ordinance** amending the section on penalties **to correct this**.
7. The **new bill will replace the ordinance**, and the amendment will be deemed to have been in **effect from 1 May 2014**.

### AGREEMENT WITH UN WFP TO FOOD BASKET

NITI Aayog has entered into an **agreement** with **United Nations World Food Program (WFP)** to address issues related to inclusion of millets in government programmes. Under the statement of intent signed between the **Aayog** and the **United Nations World Food Program (WFP)**, the focus will be on mainstreaming millets and **strengthening of climate resilient agriculture** for enhanced food and nutrition security in India, the Aayog said on 21 December 2021.

#### What

1. Aiming at a more **diversified food basket** under its **free food distribution programme** with focus on **coarse grains and millets**.
2. The partnership focuses on **mainstreaming millets** and supporting India in taking the lead globally in **knowledge exchange**.
3. Further, the partnership will aim at **building resilient livelihoods** for small-holder farmers and **adaptation capacities to climate change** and transforming food systems.
4. Under the partnership, the two parties **will work in four phases** including the development of a best practice compendium around millet mainstreaming and a **scale-up strategy** in the first phase.

#### Flashback

1. **Numerous steps** have been taken to promote millets including establishment of **center for excellence**, integration of nutri-cereals in **National Food Security Act** and establishment of **Millet Mission** in multiple states.
2. Despite this, **various challenges** in terms of **production, distribution** and **adaptability** among consumers remain.
3. Under the **distribution system**, it is time that we shift the focus of food distribution programmes from ‘**calories fundamentalism**’ to providing a more diversified food basket, including coarse grains and millets to improve the **nutritional status of pre-school children** and **women of reproductive age**.
4. The government had observed **2018 as a year of millets** to encourage and promote millet production in India and **declared 2023 as the International Year of Millets**, in line with the **United Nations General Assembly resolution**.

- In the **second phase**, they will support **scale-up of millet mainstreaming** through knowledge sharing and intense engagement with select states while they will leverage India's expertise to support developing countries for **millet mainstreaming in the third phase** and work on building capacities for **climate resilient** and **adaptive livelihood** practices in the **fourth phase**.

## BIOLOGICAL DIVERSITY BILL 2021

The Lok Sabha on 20 December 2021 referred the **Biological Diversity Bill** to a Joint Committee of **both houses of Parliament**. Environment Minister moved the motion to refer **the Bill to the Joint Committee** with **21 members of the Lok Sabha** and 10 members from the Rajya Sabha.

### What

- The **Biological Diversity (Amendment) Bill, 2021** seeks to reduce the pressure on **wild medicinal plants** by encouraging cultivation of medicinal plants, **encourage Indian system of medicine**, facilitate fast-tracking of research, **patent application process**, transfer of research results while utilising the **biological resources** available in India without compromising the objectives of **United Nations Convention on Biological Diversity**.
- It's **Nagoya Protocol**, decriminalise **certain provisions of the 2002 Act** and bring more foreign investments in the **chain of biological resources**, including research, patent and commercial utilization, without compromising the national interest.
- The bill seeks **to relax certain rules in the Biodiversity Act 2002** in order to fast track research and patenting as well as **empower local communities** to be able to utilise resources, particularly of medicinal value, such as seeds.

## FOUNDATIONAL LITERACY INDEX

**West Bengal topped the chart** and Bihar languished at the bottom in the '**large states**' category on the '**Index on Foundational Literacy and Numeracy**' -- an indicator of literacy among **children below 10 years**. In the '**small states**' category, **Kerala grabbed the top spot** and Jharkhand was adjudged the worst performer on the index.

### As per Index

- The **top-scoring regions** are **Kerala (67.95)** and **West Bengal (58.95)** in small and large states, respectively, the EAC-PM said.
- Lakshadweep (52.69)** and **Mizoram (51.64)** are top-scoring regions in the Union Territory and Northeast state category, respectively.
- As far as worst performers are concerned, **Ladakh has featured at the bottom** in the list of UTs, while **Arunachal Pradesh came last** in the North East category.

### Flashback

- The report on the '**Index on Foundational Literacy and Numeracy**' was prepared by '**Institute for Competitiveness**' and released by **Economic Advisory Council to the Prime Minister (EAC-PM)** chairman Bibek Debroy.
- It said the challenge of ensuring **quality Foundational Literacy and Numeracy for all** is daunting, yet not impossible to achieve. The Index includes **five pillars** comprising **41 indicators**.
- The **five pillars** are -- **educational infrastructure, access to education, basic health, learning outcomes** and **governance**.
- Out of the **five pillars**, it has been observed that states have performed particularly **worse in governance**.

4. The '**Index on Foundational Literacy and Numeracy**' is the first step in this direction, establishing an understanding of the overall state of Foundational Learning across **children aged below ten years** in Indian states and Union territories.
5. There are **four categories** in which regions have been divided -- **large states, small states, Union Territories** and **North East**.

## RECOMMENDATIONS ON PERSONAL DATA PROTECTION

The **Joint Committee on Personal Data Protection Bill, 2019**, headed by **PP Chaudhary**, Member of Parliament, presented their report on 16 December 2021, making recommendations to make changes to the **draft legislation**. The 540-page report consists of **recommendations on data protection and privacy** related to provisions made in the Bill.

### Key changes proposed in the 2019 Data Protection Bill

1. Change name of legislation to **Data Protection Bill** from **Personal Data Protection Bill**
2. **One data protection authority** for personal and non personal data
3. **Social media platforms not acting as intermediaries** to be liable for content they host
4. **Wider exemptions to the Centre**
5. **Independence of Data Protection Authority reduced**
6. Govt must ensure a **mirror copy of sensitive and personal data with foreign entities**
7. **Restricting cross-border data flow** under certain circumstances
8. Fiduciaries dealing with **children's data to adhere to stricter norms**
9. **Data protection officer** to be appointed by **every significant data fiduciary**

## INDIA'S FIRST GREEN HYDROGEN MICROGRID PROJECTS

State-run **NTPC Ltd** has awarded the **country's first green hydrogen microgrid project** at its **Simhadri plant** in Andhra Pradesh. **Green hydrogen** is produced by **splitting water into hydrogen and oxygen** using an **electrolyzer** powered by renewable energy sources such as **wind and solar**.

### What

1. The fuel can be a **game-changer for the energy security** of India, which **imports 85% of its oil** and **53% of gas requirements**.
2. To promote clean fuels, India is considering making it mandatory for **fertilizer plants** and **oil refineries** to purchase green hydrogen.
3. NTPC Ltd, **India's largest integrated energy company** has awarded project of '**Standalone Fuel-Cell based Micro-grid** with hydrogen production using **electrolyser**' at NTPC Simhadri (Andhra Pradesh).
4. This will be **India's first Green Hydrogen based Energy Storage Project** and one of world's largest.
5. India plans to soon call bids for building **4 gigawatt (GW) of electrolyzer capacity** as part of its **energy security strategy**.
6. It would be a precursor to **large scale hydrogen energy storage projects** and would be useful for studying and deploying **multiple microgrids** in various off-grid and strategic locations of the country.

- As part of its diversification strategy, NTPC is also looking to **leverage hydrogen for transportation** by mixing the fuel with natural gas for **City Gas Distribution (CGD) network**.

## ELECTION LAWS (AMENDMENT) BILL 2021

The **Lok Sabha** on 20 December 2021 **passed** the **Election Laws (Amendment) Bill 2021** to link **electoral roll data** with **Aadhaar eco-system**. The Bill, piloted by law minister Kiren Rijiju, was passed by a voice vote. The minister said that the bill will **cleanse the election system**.

### What

- The bill seeks to **link electoral rolls to the Aadhaar number**, allowing electoral registration officers to ask for the **12-digit numbers** of applicants wanting to register as voters to establish their identity.
- The Bill is **gender neutral** and has four qualifying dates for entry into electoral roll, is in consonance with the **Supreme Court's ruling**.
- The Bill seeks to **allow electoral registration officers** to seek Aadhaar number of people who want to register as voters "**for the purpose of establishing the identity**".
- Amendment to **Section 14 of the RP Act** will allow to have four "qualifying" dates for eligible people to register as voters. As of now, 1 January of every year is the sole qualifying date.
- People who turn 18** on or before 1 January can register as voters. Those turning 18 after that have to wait for one whole year to register as voters.
- Now, "**the 1st day of January, 1st day of April, 1st day of July and 1st day of October** in a calendar year" will be the qualifying dates in relation to the preparation or revision of electoral rolls.
- Amendment to **Section 20 of the RP Act, 1950** and Section 60 of the RP Act, 1951 will allow the elections become gender neutral for service voters.
- The amendment will also **help replace the word "wife" with the word "spouse"** making the statutes "gender neutral".
- An Armyman's wife is entitled to be enrolled as a service voter, but a woman Army officer's husband is not, according to provisions in the electoral law. With "**wife" being replaced by the term "spouse"**, this will change.

## ONORC SCHEME ROLLED OUT IN 34 STATES & UTS

The **One Nation One Ration Card (ONORC) scheme** has been rolled out in **34 states and Union Territories** covering 75 crore beneficiaries, the Union Ministry of Food and Public Distribution said on 30 December 2021. The remaining two states — **Assam and Chhattisgarh** — will be covered soon.

### What is the one 'ONORC' system?

- Under the **National Food Security Act, 2013**, persons are entitled to buy subsidized foodgrain — **rice at Rs 3/kg, wheat at Rs 2/kg, and coarse grains at Re 1/kg** — from their designated **Fair Price Shops (FPS)** of the **Targeted Public Distribution System (TPDS)**.
- In the present system, a **ration cardholder** can buy foodgrains only **from an FPS** that has been **assigned to her in the locality in which she lives**.
- However, under the **'One Nation, One Ration Card' system**, the beneficiary will be able to **buy subsidised foodgrains** from any FPS across the country.

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4. The **new system**, based on a **technological solution**, will identify a beneficiary through biometric authentication on **electronic Point of Sale (ePoS) devices** installed at the FPSs, and enable that person to purchase the quantity of foodgrains to which she is entitled under the NFSA.
5. **Ration card portability** is aimed at providing **intra-state** as well as **inter-state portability of ration cards**.
6. The **Integrated Management of Public Distribution System (IM-PDS) portal** provides the **technological platform** for the inter-state portability of ration cards, enabling a migrant worker to **buy foodgrains** from any FPS across the country, the **other portal (annavitran.nic.in) hosts** the data of distribution of foodgrains through **E-PoS devices within a state**.
7. The **Annavitran portal** enables a migrant worker or his family to avail the benefits of PDS outside their district but within their state.

## INTERNATIONAL

### INDIA VOTES FOR UNSC RESOLUTION

India has **voted in favour of a UN Security Council resolution** to grant exemption from sanctions for **humanitarian assistance to Afghanistan**, underlining that the Council should exercise its oversight on the delivery of assistance as well as guard against any possible diversion of funds.

#### What

1. **India supported the resolution** to grant exemption from sanctions for **humanitarian assistance to Afghanistan**, India's permanent representative to the UN ambassador T S Tirumurti said on 22 December 2021.
2. It is important that **assistance be scaled up** and unhindered access be provided to UN and other agencies.
3. In this context, **India has supported the call of the international community** that access to humanitarian assistance for Afghanistan should be direct and without any hindrance.
4. Assistance should reach the most **vulnerable first**, including **women, children and minorities**.
5. There are reports that suggest that **over half the population** is facing crisis or emergency **levels of acute food insecurity**.
6. As the largest regional development partner of Afghanistan, India is willing to coordinate with other stakeholders to work towards enabling expeditious provision of much needed assistance to the **people of Afghanistan**.

### INDIA WELCOMES EGYPT AS MEMBER OF NDB

India on 29 December 2021 welcomed **Egypt's entry as the fourth new member** of the **New Development Bank (NDB)** that was established by the **BRICS countries** six years ago. The NDB admitted **Bangladesh, United Arab Emirates (UAE) and Uruguay** as its **new members in September**.

#### What

1. The **expansion of the membership** by the NDB will help it position as a **premier development institution** for emerging economies.

2. The **BRICS (Brazil-Russia-India-China-South Africa)** set up the bank with an aim to **mobilise resources** for infrastructure and sustainable development projects in emerging economies.
3. The BRICS brings together **five of the largest developing countries** of the world, representing **41 per cent of the global population, 24 per cent of the global GDP** and 16 per cent of the global trade.
4. Egypt is one of the **world's fastest-growing countries**, a major economy in the **African continent** and the **Middle East region** as well as a key player in development finance institutions.
5. The NDB said it has **so far approved about 80 projects** in all of its member countries, totalling a portfolio of **USD 30 billion**.
6. Projects in areas such as **transport, water and sanitation, clean energy, digital infrastructure, social infrastructure** and **urban development** are within the scope of the bank.

## 10TH NON-EUROPEAN COUNTRY TO JOIN EUROPOL

**South Korea** has become the **10th country outside of Europe** to join the **European Union (EU) law enforcement cooperation agency** that fights terrorism and other international crimes. The **National Police Agency (NPA) joined Europol** by signing a working-level agreement that was approved unanimously by the **27 EU nations** on 6 October 2021.

### What

1. The accession is an outcome of efforts by police **to strengthen cooperation with Europe** since 2017.
2. Under the agreement, **police can now exchange information** on crime and cooperate with member states of Europol -- **17 European** and **nine non-European countries** -- as well as international organisations and research institutes collaborating with the agency.
3. The NPA said the agreement is expected **to enhance police response capabilities** against global crimes through sharing expertise and training programs, and working together with Europol officers.
4. NPA had planned to visit **Europol** headquarters in the Hague to attend a signing ceremony but exchanged the agreement with Europol's Commissioner-General Catherine De Bolle through a diplomatic pouch due to the Covid-19 pandemic.
5. **Europol, established in 1992**, is **EU's law enforcement agency** supporting the fight against terrorism, **international drug trafficking** and other serious crimes.

## ECONOMY

### OECD RELEASES RULES FOR GLOBAL MINIMUM TAX

The **Organisation for Economic Co-operation and Development (OECD)** on 20 December 2021 published detailed rules to assist in the implementation of **new international tax system**, which will ensure **multinational enterprises (MNEs)** will be subject to a **minimum 15 per cent tax rate from 2023**.

### What

1. **India** is **one among 137 countries** that are signatory **to new global tax regime**.
2. These rules would imply that the Finance Ministry may take a cue from these rules to include **similar provisions in the Finance Bill**.

3. They are drafted as **model rules** that provide a **template that jurisdictions** can translate into domestic law, which should assist them in **implementing Pillar Two** within the agreed time frame and in a **co-ordinated manner**, OECD said.
4. The rules **define the scope** and **set out the mechanism** for the **Global Anti-Base Erosion (GloBE) Rules** under Pillar Two.
5. These will assist countries **to bring the GloBE rules** into **domestic legislation in 2022**.
6. The minimum tax will **apply to MNEs** with revenue above €750 million and is estimated to generate around **\$150 billion in additional global tax revenues annually**.

#### Pillar one and Pillar two blueprints of OECD

1. **Develop a framework** to address the **taxation of the digitalised economy** with a reallocation of profits to market countries; and
2. **Continue efforts to combat BEPS** via the introduction of a **global minimum tax regime**.

## NRIS AND OCIS DON'T NEED RBI NOD

The **Reserve Bank of India**, in a clarification issued on 29 December 2021, has said that **non-resident Indians (NRIs)** and **overseas citizens of India (OCIs)** do not require prior **approval of RBI** for acquisition and **transfer of immovable property** in India, **other than agricultural land, farm house or plantation property**, as per the terms and conditions laid down in Chapter IX of the **Foreign Exchange Management (non-debt instruments) rules, 2019**, dated 17 October 2019 (as amended from time to time), issued under Section 46 of **Foreign Exchange Management Act (FEMA) 1999**.

### What

1. This is in response to a large number of queries that have been received at various offices of the Reserve Bank, based on newspaper reports on a **Supreme Court judgement**, on whether prior approval of RBI is required for acquisition or **transfer of immovable property in India** by OCIs.
2. The RBI added that the concerned **Supreme Court judgment** dated 26 February 2021 in civil appeal was related to provisions of **Foreign Exchange Regulation Act (FERA), 1973**, which has been repealed under Section 49 of **FEMA, 1999**. At present, **NRIs and OCIs** are governed by **provisions of FEMA 1999**.
3. One needs to distinguish, under **Foreign Exchange Management Act 1999** (earlier FERA), between foreign citizens who are of **Indian origin versus those not of Indian origin**.
4. Those of Indian origin are legally classified as persons of **Indian origin (PIOs) or OCIs. Non-resident Indians (NRIs)**, OCIs and PIOs do not require prior approval for the acquisition of immovable assets in India, except in the case of acquisition of farm houses or agricultural land.
5. On the other hand, **foreigners of non-Indian origin** have always **required permission from RBI**, whether under FERA, 1973 or FEMA, 1999, for the acquisition of immovable assets in India.

## NEW RULES FOR CONSUMER COMMISSIONS NOTIFIED

The **National Consumer Disputes Redressal Commission (NCDRC)** will now have jurisdiction **to entertain consumers' complaints** where the value of the goods or services **exceeds Rs 2 crore** as against the **earlier limit of over Rs 10 crore**, the government said on 30 December 2021.



### According to the new rules

1. The Centre has notified **new rules to revise pecuniary jurisdiction** for entertaining consumer complaints at **district, state and national level** commissions, a move aimed at fast disposal of cases.
2. **District commissions** will have jurisdiction to entertain complaints **up to Rs 50 lakh worth value** of goods or services as against the **earlier limit of up to Rs 1 crore**.
3. **State commissions** will now have jurisdictions for **more than Rs 50 lakh and up to Rs 2 crore**. Earlier, the limit for them was more than Rs 1 crore and up to Rs 10 crore.
4. **National commission** shall have jurisdiction to entertain complaints where the value of the goods or services paid as **consideration exceeds Rs 2 crore**.
5. The **new rules** have been framed under the **Consumer Protection Act, 2019**, which promulgates a **three-tier quasi-judicial mechanism** for redressal of consumer disputes namely district commissions, state commissions and national commission.
6. The **Consumer Protection Act, 2019**, stipulates that every complaint shall be disposed of as expeditiously as possible.

## SCIENCE AND TECHNOLOGY

### COUNTRY'S FIRST VIP LAUNCHED

The **innovation ecosystem** in India is set to get a boost with **NITI Aayog** launching the **country's first vernacular innovation programme (VIP)** which will enable innovators and entrepreneurs in India to have access to the ecosystem in **22 scheduled languages**.

#### About the initiative

1. The initiative under the **Atal Innovation Mission (AIM)**, aimed at **empowerment of innovators** and entrepreneurs.
2. It will build the **necessary capacity for the VIP** for which a **vernacular task force (VTF)** will be trained in each of the **22 scheduled languages**.
3. Each task force will **comprise vernacular language teachers**, subject experts, technical writers and the leadership of **regional Atal incubation centres (AICs)**.
4. This programme may well place India globally as the **first nation where an innovation ecosystem catering to 22 languages** and English is being developed.
5. The programme will get rolling with a collaboration involving the **design department of IIT Delhi** to coach the VTF in design thinking and entrepreneurship and the adaptation of these subjects in the **22 languages and cultures**.
6. Furthermore, **industry mentors** have joined hands to lend design thinking expertise, and CSR sponsors have agreed to support the programme.
7. On completing the training of the task force over the period of **December 2021 to April 2022**, the ecosystem will be opened to vernacular innovators.

#### Flashback

1. **As per the 2011 census**, only **10.4 per cent of Indians speak English**, most as their second, third or fourth language.
2. Not surprisingly, **only 0.02 per cent** of Indians spoke English as their first language.
3. **Local entrepreneurs, artisans and innovators** will be able to assimilate the knowledge and technical materials that AIM will develop, which will assist in building a **strong local network** of design experts and innovation practitioners.

## INDIA SEMICONDUCTOR MISSION LAUNCHED

Information Technology Minister **Ashwini Vaishnaw** launched the **India Semiconductor Mission** on 29 December 2021. The Minister said companies which are interested in tapping the Rs 76,000-crore incentives earmarked by the Centre for **development of semiconductors** and display **manufacturing ecosystem in India** can begin applying for the same from 1 January 2022.

### What

1. The **India Semiconductor Mission (ISM)** is a specialised and independent business division within the **Digital India Corporation**.
2. It has been set up with the aim **to build a vibrant semiconductor** and display ecosystem to enable India's emergence as a global hub for electronics manufacturing and design.
3. The **mission** is authorised to negotiate with the applicants under the **semiconductor fab scheme** and **the display fab scheme**.
4. This mission has been given the autonomy to decide the **appropriate technology mix**, applications, node generation and capacity, among others and propose the structure and quantum of fiscal support for the selected applicants.
5. A **fab is short for fabrication plant** where **raw silicon wafers** are processed and turned into integrated circuits.
6. A Scheme for Setting up of **Compound Semiconductors / Silicon Photonics / Sensors** (including MEMS) Fabs and **Semiconductor ATMP / OSAT** facilities in the country extends fiscal support of **30 per cent of capital expenditure** to approved units.
7. It is expected that at least **15 such units of Compound Semiconductors** and Semiconductor Packaging are expected to be established under this scheme.
8. A **Design Linked Incentive (DLI) Scheme** offers an incentive of up to 50 per cent of eligible expenditure and product deployment linked incentive of **4-6 per cent on net sales** for five years.
9. The Union Cabinet had approved these schemes on 15 December 2021. The Centre has committed a support of **Rs 2.30 trillion** for positioning India as a global hub for **electronics manufacturing**.

## JAMES WEBB SPACE TELESCOPE LAUNCHED

NASA's **James Webb Space Telescope** was launched on 25 December 2021 from South America's northeastern coast. Telescope promises to give the **world a glimpse of the universe** as it existed when the **first galaxies formed**. The revolutionary **\$9 billion infrared telescope**, hailed by NASA as the premiere **space-science observatory** of the next decade, was carried aloft inside the cargo bay of an **Ariane 5 rocket** that blasted off from the **European Space Agency's (ESA)** launch base in **French Guiana**.

### About the Telescope

1. The **Webb telescope** will reach its destination in **solar orbit** 1 million miles from Earth - about **four times farther away than the moon**.
2. **Webb's special orbital path** will keep it in **constant alignment with the Earth** as the planet and telescope circle the sun in tandem.
3. Meanwhile, **Webb's 30-year-old predecessor**, the **Hubble Space Telescope**, orbits the Earth from **340 miles away**, passing in and out of the planet's shadow **every 90 minutes**.
4. The **telescope is named** after man who oversaw NASA through most of its formative decade of the 1960s **James Webb**.

- The telescope is **about 100 times more sensitive than Hubble** and is expected to transform scientists' **understanding of the universe** and our place in it.
- Webb mainly **will view the cosmos in the infrared spectrum**, allowing it to gaze through clouds of gas and dust where stars are being born, while Hubble has operated primarily at **optical and ultraviolet wavelengths**.
- The new telescope's primary mirror - consisting of **18 hexagonal segments of gold-coated beryllium metal** - also has a much bigger light-collecting area, enabling it to observe objects at greater distances, thus farther back into time, than Hubble or any other telescope.

## AGNI PRIME MISSILE SUCCESSFULLY TEST FIRED

India on 18 December 2021 successfully tested the **new generation nuclear-capable ballistic missile 'Agni P'** from Dr APJ Abdul Kalam Island off the Odisha coast, the Defence Research and Development Organisation said. The '**Agni P**' is a **two-stage canisterised solid propellant ballistic missile** with dual redundant **navigation and guidance system**.

### What

- Various telemetry, radar, electro-optical stations** and downrange ships positioned along the eastern coast tracked and monitored the **missile trajectory and parameters**.
- The missile followed **textbook trajectory**, meeting **all mission objectives** with a **high level of accuracy**.
- This **second flight-test** has proven the reliable performance of all the advanced technologies integrated into the system.
- The **surface-to-surface ballistic missile** has a range of **1,000 to 2,000 km**.
- The **Agni P**, according to defence experts, **weighs 50 percent lesser than the Agni 3** missile and can be launched from **rail or road**.
- Additionally, it can be **stored for a longer period** and has **easy movability**, making it a great asset for the country's defence systems.

### Flashback

- The country had, for the first time on 28 June 2021, successfully test-fired its new generation **nuclear-capable Agni Prime missile**.
- This second flight-test has proven the **reliable performance** of all the advanced technologies integrated into the system.
- A paper published by Timothy Wright and Joseph Dempsey of the **International Institute for Strategic Studies**, also noted that the new missile appears to be **wider in diameter**, potentially allowing for a larger payload to be accommodated, thereby providing India with greater flexibility and targeting options.

## 'PRALAY' MISSILE SUCCESSFULLY TESTED

The **Defence Research and Development Organisation (DRDO)** on 22 December 2021 successfully conducted the **maiden flight test** of indigenously developed **surface-to-surface missile 'Pralay'**, from Dr APJ Abdul Kalam Island off the coast of Odisha.

### About the Missile

- The new missile followed the **desired quasi ballistic trajectory** and reached the designated target with **high degree accuracy**, validating the control, **guidance and mission algorithms**.

2. All the **sub-systems** performed satisfactorily. All the sensors deployed near the impact point across the eastern coast, including the downrange ships, tracked the missile trajectory and captured all the events.
3. The missile is powered by a **solid-propellant rocket motor** and many new technologies.
4. The missile has a range of **150-500 kilometres** and can be launched from a **mobile launcher**.
5. The missile guidance system includes **state-of-the-art navigation system** and **integrated avionics**.
6. The advanced missile has been developed in a way to able **to defeat interceptor missiles**. It has the ability to change its path after covering certain range mid-air.

## HEAT ABHYAS SUCCESSFULLY FLIGHT TESTED

Defence research and development organisation (DRDO) successfully conducted the **flight test** of indigenously developed **high-speed expendable Aerial Target (HEAT) Abhyas** on 23 December 2021 from Integrated Test Range (ITR), Chandipur off the coast of Odisha.

### What

1. During the flight trial, a **high subsonic speed trajectory** at a **very low altitude** with **high endurance** was demonstrated.
2. Two boosters provided **initial acceleration** during launch and a **small turbojet engine** is used to sustain **high subsonic speed** with long endurance.
3. The **indigenous data link** designed by Bengaluru based industry partner was successfully flown and tested during the flight.
4. The **performance of the system** during the **entire flight duration** has been confirmed from the data captured by various range instruments deployed.
5. **Aeronautical Development Establishment (ADE)**, Bengaluru based DRDO laboratory along with **other DRDO laboratories** has developed this **indigenous unmanned aerial target system** to meet the requirement of aerial targets of Indian Armed Forces.
6. The aircraft is controlled from a **ground-based controller** and an indigenously developed **MEMS-based Inertial Navigation System** along with the **Flight Control Computer** which helps it to follow the pre-designated path in a fully autonomous mode.

## INDIA'S FIRST RURAL 5G TECHNOLOGY TRIAL STARTS

India's first **5G technology trials** for **rural broadband** began on 23 December 2021 at **Ajol village in Gujarat** with a **base transceiver station (BTS)** installed 17km away at Unava town in the Gandhinagar district. A team of representatives from the **department of telecom (DoT)** and **two private mobile service providers** visited the village to measure speeds, recording a **105.47 Mbps** download speed and a **58.77 Mbps** upload speed.

### What

1. Among the technologies being tested are **360 degrees virtual realities** content playback, a **virtual-reality connected classroom**, 5G immersive gaming and artificial intelligence assisted **360 degrees cameras** with real-time video streams.
2. On 19 November, the DoT team checked speeds at the **Mahatma Mandir 5G site** in Gandhinagar city, which was found to be about 1.5 Gbps, about **100 times faster than 4G**.

3. **5G is designed** to deliver higher **multi-Gbps peak data speeds** for even faster internet than we enjoy today; **ultra-low latency for almost-imperceptible time lapse** between action and response; **greater network reliability**, which is a must-have; massive network capacity to support more people and **more devices without a dip in performance**; increased availability for **supporting multiple enterprise** applications and users at any point in time; and a uniformly excellent user experience.

## MISCELLANEOUS

### BHUTAN CONFERS HIGHEST CIVILIAN AWARD TO PM

**Bhutan** on 17 December 2021 conferred its highest civilian award **Ngadag Pel gi Khorlo** on **Prime Minister Narendra Modi** on the occasion of the **country's National Day**. The award, **established in 2008**, comes with a Breast Star and Sash Badge. It honours those who have **dedicated their lives to serving Bhutan's nation and people**.

#### What

1. **Prime Minister Narendra Modi** is the **first foreigner** to receive the coveted award.
2. In recent months, India has maintained **close coordination with Bhutan** and has included the Himalayan country in plans for containment of the COVID-19 pandemic.
3. Bhutan was the **first country to receive the Government of India's gift** of the coronavirus vaccines, manufactured by the **Serum Institute of India (SII)**.
4. Last month, PM launched the **second phase of the RuPay card** in Bhutan electronically.

#### Flashback

1. Last year, PM Modi received the **'Legion of Merit by the US Government'** award of the US Armed Forces that is given for exceptionally meritorious conduct in the performance of outstanding services and achievements.
2. **In 2019**, Russia conferred on him its highest civilian honour **'Order of St. Andrew'** award.
3. The UAE also conferred its highest civilian honour **'Order of Zayed Award'** on PM Modi in 2019.

### INDIGENOUSLY DEVELOPED NEXT-GEN AERV

The **indigenously developed** next-generation **Armoured Engineer Reconnaissance Vehicle (AERV)** was formally inducted into the Corps of Engineers of Indian Army in a ceremony presided over by Army Chief General MM Naravane in Pune on 21 December 2021.

#### What

1. **The AERV**, which has been developed by modifying the **amphibious infantry fighting vehicle BMP-II**, has been designed to meet the **tactical and combat requirements** of military engineers.
2. It carry out **terrestrial** and **under-water surveys** in hostile terrains, primarily for the construction of assault bridges in desert, flat and even **riverine areas for both offensive and defensive operations**.
3. The **Indian Army** has ordered 53 units of the AERV, which will be deployed with the individual engineering formations, mainly on the Western front.
4. The system has been designed by Defence Research and Development Organisation's (DRDO) **two facilities** — **Vehicles Research Development Establishment (VRDE)**, Ahmednagar, and **Research and Development Establishment**, Pune.

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5. The AERV is being manufactured by the **Ordnance Factory, Medak**, and as many as 14 electronic and sensing equipment have been installed by the **Bharat Electronics Limited**, Pune.
6. The system will enhance **existing engineer reconnaissance capabilities** of Indian Army and would be a major game changer in support of **mechanised operations** in future conflicts.

## SKIN BIOPRINTER TO SPACE

On a recent **resupply mission** to the **international space station (ISS)**, NASA's SpaceX-Dragon spacecraft carried many things necessary for scientific experiments, including supplies for crew members, and among other things, detergent and even a **skin bioprinter**, launching from Kennedy Space Center in Florida.

### What is skin bioprinting?

1. In many scientific papers, **skin bioprinting** has been hailed as "**a novel approach for creating artificial skin** from **synthetic** and **natural building blocks**."
2. How **our skin heals** after an injury is determined by multiple factors including **immune response** and **environmental changes**.
3. So, **wound healing will be different in a spacecraft or moon**, as opposed to Earth, as the pressure, **gravity and environment composition** is different.
4. **Three-dimensional (3D) bioprinting** for reconstruction of injuries involves **layer-by-layer deposition of cells** along with scaffolding materials over the injured areas.
5. **Bioprinting "enables accurate placement of cell types** and precise and reproducible fabrication of constructs to replace the injured or damaged sites".
6. So, this quickens **wound-healing** and **prevents wound infection**, making an astronaut, for example, in space to go back to doing their duties.
7. It's an absolutely important advancement over natural wound **healing especially** for large wounds.

## GOVT MANDATES TELCOS TO KEEP CALL DATA

**Department of Telecom (DoT)** has extended the **duration of archiving call data** and **internet usage** records of subscribers to **two years from one year** due to security reasons. The amendments in the licences were issued on 21 December and extended to other forms of **telecom permits** on 22 December.

### What

1. The **licensee shall maintain all commercial records/call detail record/exchange detail record/IP detail record** with record to the communications exchanged on the network.
2. Such records shall be archived for **at least two years for scrutiny** by the licensor for security reasons.
3. Telecom companies may destroy the data stored thereafter if there is no direction from the DoT thereafter.
4. The circular said that the amendment is necessary in "**public interest or in the interest of the security of the state** or for the proper conduct of the telegraphs".
5. The amendment mandates telecom companies **to maintain internet data records of subscribers** including login and logout details of all subscribers for services provided such as internet access, e-mail, internet telephony services like calls made from mobile applications or wifi calling for at least two years.

6. Earlier the rules mandated the archive **call data and internet usage records** for at least **1 year**.

## INDIA'S COVID-19 ARSENAL INCREASED

Expanding **India's vaccine basket**, the **Central Drug Authority** has approved the **Serum Institute** of India's COVID-19 vaccine **Covovax**, Biological E's jab **Corbevax** and anti-Covid pill **Molnupiravir** for restricted use in emergency situation. The announcement by Union Health Minister Mansukh Mandaviya on 28 December 2021 came a day after the **Subject Expert Committee (SEC) on COVID-19** of the **Central Drugs Standard Control Organisation (CDSCO)** recommended granting **emergency use authorisation (EUA)** to the COVID-19 vaccines Covovax and Corbevax with certain conditions.

### What

1. With this approval, the **number of Covid vaccines** which have received emergency use authorisation in the country has **increased to eight**.
2. **Six COVID-19 vaccines** -- Serum Institute's **Covishield**, Bharat Biotech's **Covaxin**, Zydus Cadila's **ZyCoV-D**, Russia's **Sputnik V** and the US-made **Moderna and Johnson and Johnson** -- had already received EUA from the Indian drug regulator earlier.
3. **Corbevax vaccine** is India's **1st indigenously developed RBD protein sub-unit vaccine** against COVID19, Made by Hyderabad-based firm **Biological-E**.
4. The **Nanoparticle Vaccine, Covovax**, will be manufactured by Pune-based firm **Serum Institute of India**.
5. **Molnupiravir**, an **antiviral drug**, will now be manufactured in the country by 13 companies for restricted use under emergency situation for treatment of adult patients with COVID-19 and who have high risk of progression of the disease.
6. It also had recommended **granting restricted emergency use approval** to the drug **Molnupiravir** for treatment of adult patients with COVID-19 and who have high risk of progression of the disease.
7. The **World Health Organisation (WHO)** had on 17 December 2021 issued emergency use listing for **Covovax**, expanding the **basket of jabs** validated by the global health body against the viral disease.

## MULTIPLE TASK FORCES FOR 6G DEVELOPMENTS

The **Department of Telecommunications (DoT)** 30 December 2021 formed as many as **six academia-driven task forces** under the **Technology Innovation Group (TIG)** on **sixth-generation** or **6G technology**, making industry representation only symbolic.

### What

1. In a notification, the department mandated immediate deliverables by 31 March 2022 that included **mapping of 6G activities** and capabilities worldwide, and a white paper on India's competencies, including research and **pre-standardisation activities**.

2. The new task groups are headed by **Bhaskar Ramamurthy**, director, Indian Institute of Technology (IIT)-Chennai.
3. The developments in India come close on the heels of a **6G task force** set up by the US House Committee under the **Federal Communications Commission (FCC)** to study design and deployment of next generation technology.
4. **6G** will continue to use the multilayer frequency band approach **adopted in 5G**, that millimeter wave (mmWave) band would be deployed for **integrated sensing** and communications applications, and **spectrum bandwidth** required may be **500 MHz** to multiple GHz per operator.
5. The **task forces** set up by the department also includes officials representing the **Ministry of Defence (MoD)**, **Ministry of Electronics & IT (MeitY)**, Department of Science & Technology (DST), **Indian Space Research Organisation (ISRO)**, Defence Research and Development Organisation (DRDO), Telecommunication Engineering Centre (TEC) and Centre for Development of Telematics (C-DoT), and Bharat Electronics Limited (BEL).