

My Notes....

NATIONAL

INDIA IN 'EASE OF DOING SOLAR 2020'

India is now one of the world's top markets for solar energy, a new report by the International Solar Alliance (ISA) said on 24 February 2021. The report, 'Ease of Doing Solar 2020', identified countries that were **high solar energy performers in 2020**. The report is a continuation of the pilot study **conducted for four member countries in 2019** which has now been expanded to cover 80 countries with a refined evaluation framework.

What

1. **ISA is a joint initiative of France and India**, launched **during COP21** with the aim of making an unprecedented effort **to promote solar energy**.
2. The goal of ISA is to **set the ground rules, norms and standards for solar energy**, in order to obtain a rapid and massive deployment in countries that are **rich in solar resources** but where the risks are still seen as high.
3. Using data across its 80 member countries, ISA reveals the **world's easiest markets to execute and invest in solar projects**. Owing to its strong potential, ambitious sustainability targets, **high solar irradiation**, and **robust power infrastructure**, **India has emerged as a leading performer** along with countries like **Brazil, Saudi Arabia**, and the **United Arab Emirates**.
4. The report lists countries like **Rwanda, Sri Lanka, Nigeria, Argentina, Egypt** and **24 others as having moderately favourable conditions** for solar investments.
5. Countries such as **Bangladesh, Ethiopia, Zimbabwe, Mozambique** and several others have been listed as progressive states that are in initial stages of development of a favourable ecosystem.
6. The report highlights the **best practices in policy and regulation amongst member countries**. It is also of particular importance to international financing institutions, as the data reveals the countries that have transparent and infrastructure-ready regimes supported by investor-friendly markets.

What the report provides

1. It provides a **snapshot of the progress made by the member countries** by using an evaluation framework consisting seven key indicators - **macro economy, policy enablers, technical feasibility, market maturity, infrastructure, financing ecosystem**, and **energy imperatives**.
2. Globally, ISA aims to undertake joint efforts to **reduce the cost of finance** and the **cost of technology** and **mobilise large-scale investment in the solar sector**.
3. It plans to launch a **World Solar Bank at the United Nation's annual global climate summit, COP26**, scheduled to take place in Glasgow, the UK, in November this year.

PSLV-C51 LAUNCHED AMAZONIA-1

For the first time, a **Brazilian satellite** was launched by an Indian rocket from Sriharikota spaceport on 28 February 2021. This also marked **Indian Space Research Organisation's (ISRO) first launch** of 2021. **PSLV-C51 rocket**, which is the **53rd mission of PSLV** (Polar Satellite Launch Vehicle), launched **Amazonia-1 of Brazil** as primary satellite and **18 co-passenger** payloads from the first launchpad of the Sriharikota spaceport in Nellore district of Andhra Pradesh.

What

1. These **co-passenger satellites** include **Satish Dhawan Sat (SD SAT)** from Chennai-based **Space Kidz India (SKI)**.
2. **PSLV-C51/Amazonia-1** is also the **first dedicated commercial mission of Bengaluru-headquartered** ISRO's commercial arm **NewSpace India Limited (NSIL)** which is undertaking it under an arrangement with **US-based satellite rideshare** and mission management provider **Spaceflight Inc.**
3. The **637-kg Amazonia-1**, which is the **first Brazilian satellite** to be launched from India, is the **optical earth observation satellite** of **National Institute for Space Research (INPE)**.
4. This satellite would further strengthen the existing structure by providing remote sensing data to users for monitoring **deforestation in the Amazon region** and analysis of diversified agriculture across the **Brazilian territory**.

NUDM FOR CREATING DIGITAL INFRA

The **Central government** 23 February 2021 launched **National Urban Digital Mission'** to create a **digital infrastructure for cities** in the country. The **Union Housing and Urban Affairs Ministry (MoHUA)** said the move will institutionalise a citizen-centric and ecosystem-driven **approach to urban governance** and service delivery in cities by 2022 and across **all cities and towns by 2024**.

What

1. **Union Housing and Urban Affairs Minister Hardeep Singh Puri** and **Minister of Electronics and IT Ravi Shankar Prasad** launched the **National Urban Digital Mission' (NUDM)** at a virtual event.
2. Other initiatives -- **India Urban Data Exchange (IUDX)**, **SmartCode**, **Smart Cities 2.0 website**, and **Geospatial Management Information System (GMIS)** -- were also launched at the event.
3. The **NUDM will create a shared digital infrastructure** that can consolidate and cross-leverage the **various digital initiatives** of the **Ministry of Housing and Urban Affairs**, enabling cities and towns across India to benefit from holistic and diverse forms of support, in keeping with their needs and local challenges.
4. Govt. also stated that other initiative '**India Urban Data Exchange (IUDX)**' has been developed in partnership between the **Smart Cities Mission** and the **Indian Institute of Science (IISc)**, Bengaluru.
5. **IUDX serves as a seamless interface for data providers** and data users, including ULBs, to share, request, and access datasets related to cities, urban governance, and urban service delivery.

6. **IUDX is an open-source software platform** which facilitates secure, authenticated, and managed exchange of data amongst various data platforms, third party authenticated and authorised applications, and other sources.
7. On '**SmartCode**', the MoHUA said that it is a platform that enables all ecosystem stakeholders to contribute to a **repository of open-source code** for various solutions and applications for urban governance.
8. It is designed to address the challenges that ULBs face in the development and deployment of **digital applications to address urban challenges**, by enabling cities to take advantage of existing codes and customising them to suit local needs, rather than having to develop new solutions from scratch.

RAMANATHAPURAM-THOOTHUKUDI NATURAL GAS PIPELINE

Prime Minister on 17 February 2021 dedicated the **Ramanathapuram-Thoothukudi natural gas pipeline** and **Gasoline desulfurisation unit in Tamil Nadu**. The project has been set up by **Chennai Petroleum Corporation Ltd (CPCL)**, a subsidiary of Indian Oil Corporation. He also laid the foundation stone for CPCL's proposed Rs 31,500 crore grass root refinery.

Ramanathapuram-Thoothukudi section

1. The **Ramanathapuram-Thoothukudi section** (143 km) of the **Ennore-Thiruvallur-Bengaluru-Puducherry-Nagapattinam-Madurai-Tuticorin Natural Gas pipeline (ETBPNMTPL)** has been laid at the cost of about Rs 700 crore.
2. The **pipeline will use the gas from ONGC fields** and deliver **indigenous natural gas** as feedstock to **Southern Petrochemical Industries Corp Ltd (SPIC)** at Tuticorin and other industrial/commercial customers and CGD GAs.

Gasoline desulfurisation unit

1. The **Gasoline desulfurisation unit at CPCL, Manali**, has been constructed at a cost of about Rs 500 crore, generating 18,000 man-days of employment.
2. The **unit will produce low sulphur (less than 8 ppm) environment-friendly gasoline**, which will reduce emission and contribute towards a cleaner environment.
3. The **grass-root refinery with nine million tonnes per annum (MMTPA) capacity** is to be set up at **Nagapattinam** by a JV between IndianOil and CPCL at an estimated project cost of Rs 31,500 crore.
4. The refinery will produce MS and Diesel meeting **BS-VI specifications** and **Polypropylene as a value-added product**.
5. It anticipates about 80 per cent indigenous sourcing of materials and services.

HYDERABAD WINS GLOBAL 'TREE CITY' STATUS

Hyderabad city has received another feather in its cap by being chosen as one among the '**Tree Cities of the World**' by the **Arbor Day Foundation** jointly with the **Food and Agriculture Organisation** of the **United Nations Organisation**. **Hyderabad is the only city in the country to have been selected for this recognition** in response to its commitment to growing and maintaining **urban forestry**.

What

1. The **recognition stands Hyderabad alongside 120 cities from 23 countries**, including developed nations such as **USA, UK, Canada, Australia** and others.
2. **Municipal Administration and Urban Development Department** had applied for this recognition based on an online submission on 31 January 2021 this year, citing the State government's **Haritha Haram programme** and its initiative for the **Urban Forest Parks**.
3. The city was **evaluated based on the five standards**, which have been spelt out by the Foundation as '**Establish Responsibility**', '**Set the Rules**', '**Know What You Have**', '**Allocate the Resources**', and '**Celebrate the Achievements**'.
4. **Hyderabad City is demonstrating leadership in management of its urban trees** and is serving as part of the solution to many of the global issues we face today.
5. This recognition is a testament to its sustained and institutional efforts to plant, nurture, and celebrates trees, development of urban and **peri-urban forestry actions**, projects, and strategic planning and commitment to building a healthy city now and for the future.



ANCIENT BUDDHIST MONASTERY FOUND

THE **ARCHAEOLOGICAL Survey of India (ASI)** has **unearthed a Buddhist monastery**, believed to be at least **900 years old**, buried under a mound in a village situated in a **hilly area of Hazaribagh district of Jharkhand**. The finding comes two months after discovery of an ancient Buddhist shrine, buried under a similar mound, barely 100 metres away.

What

1. **Over the past four days**, an team from the **Patna branch of ASI** has excavated 10 stone statues of **deity Tara and the Buddha in Burhani village** near Juljul Pahar of Sitagarhi Hills, around 12 km from district headquarters Hazaribagh.
2. On 25 February 2021, **they found a sculpture which appears to be that of Shaivite deity Maheswari** – with a **coiled crown and chakra** – indicating cultural assimilation in the area.
3. Archaeologists said the findings were significant since **the monastery is on the old route to Varanasi**, 10 km from Sarnath, where the Buddha gave his first sermon.
4. They said the presence of statues of deity Tara shows possible proliferation of **Vajrayana form of Buddhism in this region**.
5. **Vajrayana is a form of Tantric Buddhism**, which **flourished in India from 6th to 11th century**.

INDIA HOSTS FIRST MEETING OF THE BRICS FINANCE

India hosted the first meeting of the BRICS finance and central bank deputies of 2021 in virtual mode on 24 February 2021, according to a statement from the finance ministry. India had assumed the BRICS chairship for this year, at a time when the organisation, formed by the nations of Brazil, India, Russia, China and South Africa, was celebrating its 15th anniversary.

What

1. The priorities for the year, set by India, included the global economic outlook and response to Covid-19 and social infrastructure financing.
2. The issues discussed ranged from the activities of the New Development Bank, fintech for small and medium enterprises, financial inclusion and the BRICS contingent reserve arrangement, which is a framework for the provision of support through liquidity and precautionary instruments in response to actual or potential short-term balance of payments pressures.
3. Other participants included BRICS Finance and Central Bank Deputies of Brazil, Russia, China and South Africa.
4. India's approach is focused on strengthening collaboration through Continuity, Consolidation and Consensus.
5. It was earlier reported that Chinese President Xi Jinping may visit India in the second half of the current year to attend the BRICS leaders' meet in New Delhi if it is done physically.
6. The visit will especially be watched given that the armies of the two countries just ended a months-long standoff in eastern Ladakh after hectic negotiations.

INTERNATIONAL

FIRST CECPA WITH MAURITIUS

India and Mauritius have signed a free trade agreement, under which over 300 domestic goods from agriculture, textiles, electronics and other sectors will get market access at concessional customs duties in the African nation, an official statement said on 23 February 2021. According to a commerce ministry statement, India-Mauritius Comprehensive Economic Cooperation and Partnership Agreement (CECPA) signed in Port Louis on 22 February 2021.

What

1. The Union Cabinet on 17 February 2021 had approved signing of this pact. Mauritius will benefit from preferential market access into India for its 615 products, including frozen fish, speciality sugar, biscuits, fresh fruits, juices, mineral water, beer, alcoholic drinks, soaps, bags, medical and surgical equipment, and apparel.
2. In a free trade agreement, two trading partners cut or eliminate customs duties on a host of products besides liberalising norms to promote services trade.
3. The CECPA covers 310 export items for India, including food stuff and beverages (80 items), agricultural products (25 items), textile and textile articles (27

- items**), base metals and articles thereof (32 items), electricals and electronic item (13 items), plastics and chemicals (20 items), wood and articles thereof (15 items), and others.
- The two sides also discussed the **Chagos Archipelago dispute**, which was an issue of sovereignty and sustainable development before the United Nations.
 - In 2019, India voted at the U.N. General Assembly** in support of the Mauritian position on the issue.
 - India was one of the 116 countries** that voted demanding that the U.K. end its “colonial administration” from the group of islands.

FIRST COUNTRY TO BENEFIT UNDER COVAX SCHEME

Ghana became the first country on 24 February 2021 **to receive a batch of free anti-coronavirus vaccine doses** through the **COVAX initiative**, a **shot-sharing scheme** behind the inoculation drive in poorer countries. The shipment of 600,000 AstraZeneca doses was the first step in immunizing the West African nation of 30 million.

What

- The shipment, WHO said, is **part of the first wave of vaccine** deliveries headed to several low- and middle-income countries.
- COVAX aims to ship close to 2 billion doses of vaccines** by the end of 2021, in an unprecedented global effort to guarantee access to vaccines for all.
- COVAX is an international program** led by the **UN's World Health Organization**, the **Gavi vaccine alliance**, and the **Coalition for Epidemic Preparedness Innovations**, or **CEPI**.
- It was **launched in June 2020** in a bid to prevent poorer nations missing out on COVID-19 vaccines as wealthier nations secured billions of doses for their populations.

AUSTRALIAN SPACE AGENCY AND ISRO SIGNED MOU

The **Australian Space Agency and Isro**, on 17 February 2021 **signed an MoU** to increase cooperation across **civil space activities**. The Australian consulate general's office, while stating that **this MoU covered an amendment to the Civil Space Cooperation (CSC) MoU**, said this builds on the **comprehensive strategic partnership between the two countries** announced by Australian Prime Minister Scott Morrison and PM Narendra Modi last year.

What

- The **agreement will encourage collaboration between both countries** in the **fields of civil space research**, technology and capability development, educational activities and the **use of outer space for peaceful purposes**.
- India and Australia had signed an MoU on CSC in 2012**. In 2016, the **Space Industry Association of Australia** had a delegation participate in the **Bengaluru Space Expo** and in 2017, an Isro delegation participated in the **International Astronautical Congress held in Adelaide**, and the CSC MoU was given a formal implementing structure.

3. **Geosciences Australia** — a government agency carrying out **geoscientific research** — and **Isro** have arrangements to cooperate on **satellite laser ranging** and tracking of the **Indian Regional Navigation Satellite System (IRNSS)** and on **using Australian corner reflector infrastructure for calibration** and validation of the Indian synthetic aperture radar systems.
4. In February 2020, then Australian trade minister Birmingham visited Isro's headquarters and in November 2020, Morrison led a **185-strong delegation to the Bengaluru Tech summit**.

AGREEMENT FOR CENTRE OF EXCELLENCE ON HYDROGEN

Indian Oil has signed a **preliminary agreement with Norway's Greenstat** to set up a **centre of excellence on hydrogen**. The **centre of excellence on hydrogen** will be a vehicle for promoting R&D projects in **green and blue hydrogen** between Norwegian and Indian R&D institutions/universities, a statement by Indian Oil said.

What

1. The **centre will facilitate transfer and sharing of technology**, know-how and experience through the **green hydrogen value chain** and other relevant technologies including hydrogen storage and fuel cells.
2. The institute will also act as a think-tank towards developing codes and standards for best industrial practices, safety, product protocols and regulations **in the area of hydrogen and fuel cells**.
3. The **partnership between Indian Oil and Greenstat** will assist stakeholders in developing business models besides offering consultancies to industry, utilities and regulators on **hydrogen storage, hydrogen production, refuelling stations, fuel cells** and **carbon capture technologies**.
4. The government plans to set up a **national hydrogen mission**, finance minister Nirmala Sitharaman had said in her Budget speech.

GAVI INKS PACT WITH SII

GAVI, the **vaccine alliance**, on 19 February 2021, said that it has signed a **Memorandum of Understanding with US vaccine maker Novavax and Serum Institute of India (SII)** for the supply of Covid-19 vaccines to the **WHO backed Covax facility**. The MOU will combine the **existing agreement that SII and Novavax have** for vaccine supply, which includes a commitment to provide a total of 1.1 billion doses of Novavax's candidate **NVX-CoV2373** to the Covax Facility.

What

1. The **Novavax vaccine has shown 90% efficacy in phase 3 clinical trials in the UK** that enrolled more than 15,000 participants aged 18-84 years, of whom 27% were over 65. The vaccine was shown to work against the more infectious UK strain.
2. However, its efficacy against the group detected with the **South Africa strain was 60%**.

3. **In India, SII is running a bridging trial for Novavax.** India is considered a middle-income country under **Covax scheme** and is expected to receive doses under this pact.
4. This agreement **brings the Covax facility** a step closer to its goal of supplying vaccines globally and ending the acute phase of the pandemic.
5. Gavi said the **1.1 billion cumulative volumes of doses** will be made available to the facility via a final advance purchase agreement with Novavax, once signed, and an existing pact between **Gavi and the Serum Institute of India (SII)** made possible by a **Novavax-SII technology transfer agreement**, at no cost, and facilitated by **UNICEF's agreement with SII.**

INDIA, US REAFFIRM STRATEGIC PARTNERSHIP

India and the US reaffirmed **their strategic partnership** and efforts to **strengthen multilateralism**, during a meeting between the UN envoys of the two democracies on 28 February 2021, as Washington praised New Delhi for supplying critical COVID-19 vaccines across the world. US Ambassador to the UN, Linda Thomas-Greenfield, held a series of bilateral meetings with her UN Security Council counterparts.

What

1. **India's Permanent Representative to the UN**, Ambassador **T S Tirumurti** said that during the meeting with Thomas-Greenfield the two sides reaffirmed their strategic partnership.
2. **Beginning its two-year tenure as a non-permanent member** of the powerful 15-nation council in January, India had said **it comes into the Security Council** as the largest democracy in the world, representing **one-sixth of humanity** and "with a strong commitment to reformed multilateralism, rule of law, fair and equitable international system, peace, security and development."
3. Thomas-Greenfield, who formally presented her credentials to UN Secretary General Antonio Guterres last week, asserted that "**multilateralism is back**, and **diplomacy is back**, and **America is back**, and we're ready to get to work."
4. India's efforts and contribution towards providing **critical supplies of the COVID-19** vaccines around the world are being widely applauded, with UN Secretary General Antonio Guterres hailing India for being a global leader in pandemic response efforts.
5. India has provided coronavirus vaccines, critical medicines, diagnostic kits, ventilators and personal protective equipment to **more than 150 countries.**
6. India has also announced a gift of **200,000 COVID-19 vaccine doses for UN Peacekeepers**, ensuring that it will be possible to administer the required double doses of COVID-19 vaccines to the 94,484-UN Peacekeepers across the 12 missions.
7. Under the initiative '**Vaccine Maitri**' -- translates to '**Vaccine Friendship**' -- India is providing **immunisation doses to the world.**
8. India is a significant contributor to the **international vaccine alliance, COVAX**, and that it was also directly sending vaccines to friends and partners.

ECONOMY

DRAFT OF BLUE ECONOMY POLICY

The **Ministry of Earth Sciences (MoES)** has **rolled out the draft blue economy policy** in the public domain, inviting suggestions and inputs from various stakeholders, including industry, NGOs, academia and citizens. The **draft policy document outlines the vision and strategy** that can be adopted by the government to **utilize the plethora of oceanic resources** available in the country.

What

- The document has recognised **seven thematic areas**: national accounting framework for the blue economy and ocean governance; coastal marine spatial planning and tourism; marine fisheries, aquaculture, and fish processing; manufacturing, emerging industries, trade, technology, services, and skill development; logistics, infrastructure and shipping, including trans-shipments; coastal and deep-sea mining and offshore energy and security, strategic dimensions and international engagement.
- The policy document has been **disseminated for public consultation on several outreach platforms**, including websites and social media handles of the MoES and its institutes. Stakeholders have been invited to submit inputs and ideas by 27 February 2021.
- The policy document **aims to enhance contribution of the blue economy to India's GDP**, improve lives of coastal communities, preserve marine biodiversity, and maintain the national security of marine areas and resources.
- India's blue economy is understood as a subset of the national economy** comprising an entire ocean resources system and human-made economic infrastructure in marine, maritime, and onshore coastal zones within the country's legal jurisdiction.
- It aids the production of goods and services that have clear linkages with economic growth, environmental sustainability, and national security.

Flashback

- With a **coastline of nearly 7,500 kilometres**, India has a **unique maritime position**.
- Nine of its 29 states are coastal** and the **nation's geography includes 1,382 islands**.
- There are nearly 199 ports**, including **12 major ones** that handle approximately 1,400 million tonnes of cargo each year.
- Moreover, **India's exclusive economic zone of over 2 million square kilometres** has a bounty of living and non-living resources with significant recoverable resources, such as **crude oil and natural gas**.
- The **coastal economy sustains over 40 lakh fisherfolk** and **coastal communities**.
- With these vast maritime interests, the blue economy occupies a vital potential position in India's economic growth.
- Therefore, **India's draft blue economy policy is envisaged as a crucial framework** towards unlocking country's potential for economic growth and welfare.

MCA SIGNS PACT FOR DATA EXCHANGE

The **corporate affairs ministry** on 25 February 2021 said **it has signed a pact** with the **Central Board of Indirect Taxes and Customs (CBIC)**, under the finance ministry, for data exchange between the two organisations. The memorandum of understanding (MoU) **will facilitate the sharing of data and information between MCA and CBIC** on an automatic and regular basis, according to a statement by the Ministry of Corporate Affairs (MCA).

What

1. The **MoU is in line with the vision of MCA and CBIC to harness data capabilities** to ensure effective enforcement.
2. Their databases include details of **import-export transactions** and consolidated financial statements of companies registered in the country.
3. In addition to regular exchange of data, **MCA and CBIC will also exchange with each other**, on request, any information available in their respective databases, for the purpose of carrying out scrutiny, inspection, investigation and prosecution.
4. The MoU comes into force from the date it was signed and is an ongoing initiative of MCA and CBIC, who are already collaborating through various existing mechanisms.
5. A **data exchange steering group has also been constituted for the initiative**, which will meet periodically, to review the data exchange status and take steps to further improve the effectiveness of the data-sharing mechanism.

UMBRELLA ENTITY ON RETAIL PAYMENTS

The **RBI** on 26 February 2021 **extended the deadline to apply for an umbrella entity**, which the **central bank wants to set up to focus on retail payments system** in the country, by over a month to 31 March in view of the pandemic. In August last year, **RBI had released a framework for authorisation of an umbrella entity** for retail payments in the country and had invited applications from desirous entities by 26 February 2021.

What

1. Requests have been received from various stakeholders including **Indian Banks' Association for extending the deadline**, keeping in view the COVID-19 related disruptions and inconveniences, RBI said in a release.
2. It has been accordingly decided to extend the timeline for making the application up to 31 March 2021.
3. The **entity is to be set up as a company as a for-profit under the Companies Act, 2013** and will get authorisation under the **Payment and Settlement Systems Act, 2007 (PSS Act)**.
4. These **activities include but not limited to ATMs, White Label PoS**; Aadhaar based payments and remittance services; newer payment methods, standards and technologies; monitor related issues in the country and internationally; **taking care of developmental objectives** like enhancement of awareness about the payment systems.

5. They are also expected to operate clearing and settlement systems for participating banks and non-banks, carry on any other business suitable to further strengthen the retail payments ecosystem in the country.
6. Such entities are also expected to interact and be interoperable, to the extent possible, with the systems operated by **National Payments Corporation of India (NPCI)**.
7. The umbrella entity may be permitted **to participate in Reserve Bank's payment and settlement systems**, including having a current account with RBI, if required, the regulator had said in August last year.

SCIENCE AND TECHNOLOGY

HELINA LAUNCHED FROM DHRUV

Four HELINA anti-tank missiles were launched from **Advanced Light Helicopter (ALH) Dhruv helicopter** in the Rajasthan sector on 19 February 2021, Defence Research and Development Organisation (DRDO) said. The **HELINA anti-tank missiles** were test-fired during the **joint user trials** by the **Indian Army and Indian Air Force (IAF)**.

Features of HELINA Missile

1. The **HELINA is a third-generation 'stain and forget'** anti-tank missile (ATGM) system, which is installed on a **modern light helicopter (ALH)**.
2. It is capable of reaching its **target of over 7 km**. It can destroy warhead tanks with conventional weapons as well as explosive reactive weapons.
3. The HELINA missile can hit the target in both **direct hit mode as well as top attack mode**.
4. The **Nag generation missile was named HELINA** because it was fired by helicopter.
5. DRDO scientists claim that **the missile is capable of accurately attacking its targets in all weather**, day or night.
6. **Dhruvastra, a variant of the Helena Weapon System**, has been inducted into the Indian Air Force.
7. Previously, **imaging infra-red (IIR) Sikar systems** were successfully tested in anti-tank guided missiles **Nag, HELINA and MPATGM**.
8. **Nag Missile** is now compared with the **Wire Guided HJ-8 or Hongjian-8 system of the People's Liberation Army (PLA) of China** and the **BARQ laser-guided missile** developed by Pakistan.

FIRST EVER RRI TRANSFERS QUANTUM ENCRYPTION

For the **first time in India**, scientists part of the **Quantum Experiments using Satellite Technology (QuEST) project** from the **Raman Research Institute (RRI)** have claimed a breakthrough that will enable **safe communications across strategic sectors** ranging from banking to defence. Scientists claimed that this will be an important stepping stone towards the **Centre's vision of connecting up different nodes in the country** through free space and fibre based channels.

What

1. This is poised to **revolutionise security for strategic sectors** like **banking, defence services, cyber security** as well as for applications involving the common man, which need to be kept safe from unwanted intrusions.
2. Working on **quantum cryptography** — encrypting a message in a way nobody can read it at the quantum (minimal level of a unit in physics) level — the scientists have demonstrated the ability to share this secret key “safely” to another building using satellites.
3. **QuEST, carried out by RRI’s Quantum Information and Computing (QuIC) lab** led by Prof Urbasi Sinha, is **India’s first project on satellite-based long distance quantum communications**.
4. Started **in 2017, QuEST is being implemented in collaboration with Isro**.
5. In 2020 that Sinha’s team had developed a toolkit that enabled safe **quantum keys distribution (QKD)** — transfer of secret key that allows reading of encrypted messages — safely between devices.
6. This is **India’s first reported free space quantum key distribution experiment** which connects two buildings using an atmospheric channel.
7. This is a **breakthrough milestone for the QuEST** as this will pave the way for longer distances using atmospheric channels, ultimately culminating with ground to satellite based secure quantum communications.
8. The breakthrough assumes importance because **quantum technologies are poised to revolutionise life** as we know it, quantum computers are vulnerable.

MICROBES FROM EARTH SURVIVE ON MARS

Some microbes found on Earth may **temporarily survive on the surface of Mars**, according to a study that could be vital for the success of **future missions to the Red Planet**. The researchers from **NASA and German Aerospace Center** tested the **endurance of microorganisms to Martian conditions** by launching them into **stratosphere**, the second major layer of Earth's atmosphere which closely represents key conditions on Mars.

What

1. The study, published in the **journal Frontiers in Microbiology**, paves the way for understanding not only the threat of microbes to space missions, but also the **opportunities for resource independence from Earth**.
2. **Some microbes**, in **particular spores** from the **black mold fungus**, were able to survive the trip, even when exposed to **very high UV radiation**.
3. When searching for **extra-terrestrial life**, the scientists need to be sure that anything that they discover has not just travelled from the Earth.
4. In addition, **some microbes could be invaluable for space exploration**. They could help us produce food and material supplies independently from Earth, which will be crucial when far away from home.
5. **Many key characteristics of the environment at the Martian surface** cannot be found or easily replicated at the surface of Earth however in **middle stratosphere** the conditions are remarkably similar.

FIRST ARCTIC MONITORING SATELLITE

A **Soyuz rocket** blasted off from the **Baikonur cosmodrome in Kazakhstan** on 28 February 2021 carrying **Russia's first satellite for monitoring the Arctic's climate**, the Roscosmos space agency said. The '**Arktika**' **hydrometeorological and climate monitoring space system** is designed to monitor the climate and environment in the Arctic region.

What

1. The **monitoring system** will need **at least two satellites to operate properly**.
2. As part of the system, they will provide round-the-clock all-weather monitoring of the **Earth's surface and the seas of the Arctic Ocean**.
3. The launch of the **second Arktika-M satellite** is planned for 2023, Russian state news agency RIA Novosti reported.
4. **Economic development of the Arctic** is one of Russian President Vladimir Putin's key goals.
5. The **Arctic holds huge oil and gas reserves** that are being eyed by Russia and other countries including the **United States, Canada and Norway**.
6. UK scientists last month reported ice was disappearing across the world at a rate that matched "**worst-case climate warming scenarios**".
7. The team from the universities of Edinburgh and Leeds and University College London found that some of the largest losses in the last three decades were from **Arctic Sea ice**.

EARTH TO VOYAGER 2

In the **nearly 44 years since NASA launched Voyager 2**, the spacecraft has gone beyond the frontiers of human exploration by visiting **Uranus, Neptune and, eventually, interstellar space**. In March, the agency was **compelled to shut down its only means of reaching 12 billion miles** across the heavens to this **robotic trailblazer**.

What

1. On 19 February 2021, **Earth's haunting silence will come to an end** as NASA switches that communications channel back on, restoring humanity's ability to say **hello to its distant explorer**.
2. Because of the direction in which **it is flying out of the solar system, Voyager 2 can only receive commands from Earth via one antenna** in the entire world.
3. It is called **DSS 43** and it is in Canberra, Australia. It is **part of the Deep Space Network, or DSN**, which along with stations in California and

Flashback

1. **Both Voyager 1 and Voyager 2** hold the **records for the farthest a spacecraft has ever traveled** and for the **longest operating mission**.
2. **Voyager 2 has had a few hiccups over the years**, but it is still feeling its way around in the dark, making discoveries about the boundaries that **separate our solar system from the rest of the Milky Way galaxy**.

- Spain, is how NASA and allied space agencies stay in touch with the armada of robotic spacecraft exploring everything from the sun's corona to the regions of the **Kuiper belt beyond the orbit of Pluto**. (Voyager 2's twin, Voyager 1, is able to communicate with the other two stations.)
4. A round-trip communication with **Voyager 2 takes about 35 hours** — 17 hours and 35 minutes each way.
 5. **DSS 43 is a 70-meter dish** that has been **operating since 1973**. It was long overdue for upgrades, especially with new robotic missions headed to Mars this year and even more preparing to launch to study other worlds in the months and years to come.
 6. If anything had gone wrong aboard the probe during the last year, NASA would have been powerless to fix it.

MISCELLANEOUS

INDIA'S FIRST DIGITAL VARSITY

Kerala took a major step forward in its progress towards a knowledge society with the inauguration of the **country's first Digital University**, based in **Technocity at Mangalapuram** on 20 February 2021. Chief Minister Pinarayi Vijayan presided over the function, where Governor Arif Mohammed Khan, who is also the Chancellor of the **Kerala University of Digital Sciences, Innovation and Technology (KUDSIT)**, unveiled the varsity plaque.

What

1. The **launch of the Digital University** is part of the state's resolve **to embrace new technologies** and desire to use them for bringing positive changes in the life of people and **become a global hub for higher learning and technology**.
2. The **society expects the Digital University to provide intellectual support** to lap up the new world of opportunities arising through **artificial intelligence (AI), Blockchain, Data Analytics** and **other digital transformation courses**.
3. The **Digital University aims at utilising the developments in digital technology for social progress**, the benefits of digital technology should be made available for people in various walks of life.
4. The Digital University is set up by **upgrading two-decade-old Indian Institute of Information Technology and Management Kerala (IIITM-K)**, a center of excellence in information technologies established by Government of Kerala.
5. It is formed with a vision of creating a **futuristic institution of higher learning**, aspiring to set a global benchmark in Digital technologies and its management.
6. The university is starting with five schools of knowledge—School of Computer Science and Engineering; **School of Digital Sciences; School of Electronic Systems and Automation; School of Informatics**; and **School of Digital Humanities** and Liberal Arts, covering science, technology and humanities aspects of the Digital world.
7. Towards this, specialized centres in areas like **Blockchain, AI & ML, Cyber Security, Bigdata analytics, Biocomputing and Geospatial analytics** are to be set up in collaboration with leading international academic, research and industry bodies.

'KALA NAMAK' RICE EXPORT TO SINGAPORE

Uttar Pradesh is set to send a **consignment of 20 tonnes of Buddha Rice**, popularly known as "**Kala Namak**" Rice, one of the **finest varieties of aromatic rice in India**, to Singapore soon. The consignment will be sent to Singapore from Siddharth Nagar by the end of March this year. The rice is being packaged in **attractive glass jars** with all its qualities clearly mentioned on it.

What

1. Also known as '**Buddha ka Mahaprasad**' (an offering to Lord Buddha), the Kala Namak Rice has been rebranded as '**Buddha Rice**', presenting it as an offering made to the Buddhist monks, in order to promote it in **Buddhist countries**.
2. The packaging of the rice carries a popular quote of Mahatma Buddha saying '**The unique aroma of the rice will remind people about me**'.
3. The export of the rice is being seen as a morale booster for farmers cultivating Buddha Rice in Gorakhpur, Deoria, Kushinagar, Maharajganj, Siddharth Nagar, Sant Kabeer Nagar, Bahraich, Balrampur, Gonda, Shravasti, which according to the Geographical Indications (GI) share a similar climate.
4. In order to promote the production, processing, packaging, and **branding of Kala Namak Rice**, the UP Government has declared it as the **One District One Product (ODOP)** of Siddharth Nagar whereas the Central Government has announced it as the ODOP of Basti, Gorakhpur, Maharajganj and Sant Kabir Nagar as well.
5. The historically **Kala Namak Rice** was grown at Bajaha Village in Siddharth Nagar district during the period of Mahatma Buddha.
6. Meanwhile, a **Kala Namak Rice festival on the pattern of Strawberry Festival** will be held in the state in near future.
7. There is also a plan to set up a **Kala Namak Rice Research Centre at Siddharth Nagar** in cooperation with the **International Rice Research Centre, Varanasi**.

NO-FAULT COMPENSATION UNDER COVAX

The **World Health Organization (WHO)** and **US-based risk management services provider ESIS Inc** signed an agreement on **behalf of the Covax** for the administration of a no-fault compensation programme for **92 low- and middle-income countries, including India**, that are eligible to get vaccines paid through the facility. The **multilateral agency signed the agreement** with the subsidiary of property and casualty insurance giant Chubb Ltd, a release by **Gavi**, the Vaccine Alliance said.

What

1. **Covax is a facility** aimed at **equitable access to covid-19 vaccines globally** and is jointly **led by the WHO, Coalition for Epidemic Preparedness Innovations (CEPI)** and **Gavi**, the Vaccine Alliance.
2. Under the facility's **Advance Market Commitment (AMC) programme**, 92 countries will get the vaccine supported by **Covax's dedicated fund**.
3. A **no-fault compensation allows vaccine beneficiaries** to receive compensation in case of a rare, but serious, adverse events associated with vaccines without making the beneficiaries to prove that the vaccine was the cause of the serious injury.

4. Covax's **no-fault compensation programme will be the first vaccine-injury compensation mechanism** that would operate on an international scale, and will offer countries eligible under AMC the support to disburse compensation for rare but serious adverse events associated with **Covax-distributed vaccines** until 30 June next year.
5. The no-fault compensation scheme **not only gives COVAX a clear advantage over bilateral deals for lower-income countries**, giving them access to a **legal mechanism and funds** specifically for this issue, it gives us a model for future pandemics.
6. The **no-fault compensation is also likely to help India**, which is scheduled to get funding for over **97 million doses of Covishield through the Covax facility**.
7. However, **India itself neither has a compensation mechanism** for serious vaccine injuries caused by the jabs, let alone a **no-fault compensation mechanism**. But if the vaccinee is part of clinical trial, then they are eligible for compensation from the sponsor, if they can prove that the vaccine was the cause.
8. At present, **Serum Institute of India is not providing compensation for vaccine injuries** from Covishield, but **Bharat Biotech International has to provide the compensation** as Covaxin is given an authorisation under "clinical trial" mode.

INDIA IN LIST OF COUNTRIES FACING CYBERATTACKS

India was second on the list of Asia-Pacific countries which faced the most cyberattacks in 2020, revealed a **new report by IBM Security X-Force**. India faced **seven per cent of all attacks in Asia** in the previous year with **Japan on top**. Globally, **Europe was the most affected continent** with over 31 per cent attacks accounted for, and majority being ransomware attacks.

What

1. As per the **2021 X-Force Threat Intelligence Index, finance and insurance was the most affected sector in India** as it **faced 60 per cent of the attacks**.
2. In 2020, most of the attacks on companies in India were observed from May to July period.
3. Cyber attackers took advantage of the conditions created by the Covid-19 pandemic globally and targeted sectors like hospitals, medical and pharmaceutical manufacturers and others as companies.
4. This reason was that **these sectors were part of the Covid-19 supply chain** and could not afford downtime, and thus had to pay off the ransomware eventually.
5. The report also includes the **top 10 list of the most spoofed brands of the year**.
6. **Google was the most spoofed brand** followed by Dropbox, YouTube, Facebook Amazon, Apple, Adidas, Microsoft, PayPal and WhatsApp.
7. The report mentions that the data collected is "based on insights and observations from monitoring over 150 billion security events per day in **more than 130 countries**".

'CODE OF ETHICS' FOR DIGITAL MEDIA

The government on 25 February 2021 said a **'code of ethics'** and **three-tier grievance redressal mechanism** would be applicable for **news publishers, over-the-top (OTT) platforms** and **digital media**. The government said **OTT platforms** (like Netflix and Amazon Prime Video) would have to self-classify the content into **five age-based categories** - **U (Universal), U/A 7+ (years), U/A 13+, U/A 16+, and A (Adult)**.

What

1. OTT platforms would be required to implement **parental locks for content** classified as **U/A 13+ or higher**, and reliable age-verification mechanisms for content classified as 'A'.
2. The publishers of online curated content will also have to prominently display the classification rating specific to each content or programme together with a content descriptor informing the user about the nature of the content.
3. This would help viewers assess the nature of content at the beginning of every programme, and **make an informed decision**, prior to watching the programme.
4. **Publishers of news on digital media** would be required to **observe Norms of Journalistic Conduct of the Press Council of India** and the Programme Code under the **Cable Television Networks Regulation Act**, providing a level-playing field between the offline (Print, TV) and digital media.
5. A **three-level grievance redressal mechanism** has been established under the rules with different levels of self-regulation, wherein **level-1 would be self-regulation** by the publishers; **level-2 self-regulation by the self-regulating bodies of the publishers**; and **level-3 would be oversight mechanism**.
6. The rules state a publisher will have to appoint a **grievance redressal officer**, based in India, who will be responsible for the redressal of grievances received by it. The officer will take decision on every grievance received by it **within 15 days**.
7. The rules also note that there may be one or more self-regulatory bodies of publishers.
8. Such a body will be **headed by a retired judge of the Supreme Court**, a high court or independent eminent person, and will not have more than six members. Such a body will have to register with the ministry of information and broadcasting.
9. This body will oversee the adherence by the publisher to the **Code of Ethics** and address grievances that have not been resolved by the publisher within 15 days.
10. The **ministry of information and broadcasting** shall formulate an oversight mechanism and will publish a charter for self-regulating bodies, including Codes of Practices. It shall establish an **Inter-Departmental Committee for hearing grievances**.

WORLD'S FIRST SEED PRODUCER

Kaveri Seeds Company said it has become the **first seed producer in the world** with more than one lakh acres under seed production in a country. The **bulk of the newly acquired seed production area** is dedicated to the **non-cotton sector** and mostly towards **high-margin hybrid rice**, maize and vegetable seeds, and nearly half of the land is located in and around the **Telugu states of Andhra Pradesh and Telangana**, India's largest listed producer of hybrid seeds said.

What

1. With rising seed replacement ratios where farmers are **picking up more hybrid varieties of rice and maize**, the company with Rs 930 crore of annual revenue is also eyeing margins of **around 50% over the next 3-4 years** against the **current blended margin of 20%**.
2. The product mix will also undergo a significant change where **non-cotton seeds** will be dominating with **around 60% of revenue contribution over this period**. Currently, **47% of revenue comes from selling cotton seeds**.
3. **Hybrid rice**, which currently contributes around a quarter of Kaveri Seeds' revenue, has emerged as the second-largest revenue contributor after cotton.

GEM REPORT ON EDUCATION

Education budgets were cut by 65 per cent of low and lower-middle income countries after the **onset of the Covid-19 pandemic** while **only 33 per cent of high and upper-middle income countries** did so, according to a report by the **World Bank**. The report, compiled in **collaboration with UNESCO's Global Education Monitoring (GEM) Report**, said the current levels of government spending in low and lower-middle income countries fall short of those required to achieve the **Sustainable Development Goals (SDGs)**.

What

1. In order to understand the **short-term impact of the Covid-19 pandemic on education budgets**, information was collected for a sample of **29 countries** across all regions.
2. The sample represents **about 54 per cent of the world's school and university** aged population. The information collected was then verified with **World Bank country teams**.
3. Responding to the **Covid-19 crisis requires additional spending** to adapt schools for compliance with the necessary measures to control contagion and to fund programs to make up for the losses in learning students experienced while schools were closed.
4. The sample includes **three low-income countries** (Afghanistan, Ethiopia, Uganda); **14 lower-middle income countries** (Bangladesh, Egypt, India, Kenya, Kyrgyz Republic, Morocco, Myanmar, Nepal, Nigeria, Pakistan, Philippines, Tanzania, Ukraine, Uzbekistan); **10 upper-middle income nations** (Argentina, Brazil, Colombia, Jordan, Indonesia, Kazakhstan, Mexico, Peru, Russia, Turkey); and **two high-income countries** (Chile, Panama).
5. The **following countries have education shares below 10 per cent** and therefore are likely to have other main financing sources besides budget assigned by the central government: Argentina, Brazil, Egypt, **India**, Myanmar, Nigeria, Pakistan, and Russia.
6. It is not clear that countries that have seen a **decline in their education budget** will be able to cover these costs increased during the pandemic alongside the regular increases in funding needed to support growing **school-age populations**.
7. Despite the urgent need for **adequate funding to allow school systems** to reopen safely, about half of the countries in the sample cut their education budgets.
8. This scarcely bodes well for the future, when **macroeconomic conditions** are expected to worsen.