

My Notes....

NATIONAL

ARIIA 2020

IIT Madras, Bombay and Delhi have emerged as the **top three institutes of national importance** in the 'Atal Ranking of Institutions on Innovation Achievements (ARIIA) 2020'. The rankings were released on 18 August 2020. The **Institute of Chemical Technology, Maharashtra**; Panjab University, Chandigarh; and Chaudhary Charan Singh Haryana Agricultural University, Haryana bagged the top three spots in the government and government-aided universities category. **Seven IITs figure among the top 10 institutes.** Around 674 institutions had participated in the **ARIIA Rankings this year compared with 496 Institutions** last year.

What

- The rankings were released by Vice President M Venkaiah Naidu in the presence of Ramesh Pokhriyal, Union minister for education and Sanjay Dhotre, junior minister of education.

A. Publicly Funded Institution: Top Ranked HEIs					
1. Institute of National Importance, Central Universities & CFTIs (HEIs in Top 10 Rank)					
Sl No	Institute ID	Institute Name	Rank	State	Region
1	ARI-U-0456	Indian Institute of Technology Madras	1	Tamil Nadu	South
2	ARI-U-0306	Indian Institute of Technology Bombay	2	Maharashtra	West
3	ARI-I-1074	Indian Institute of Technology Delhi	3	Delhi	North
4	ARI-U-0220	Indian Institute of Science	4	Karnataka	South
5	ARI-U-0573	Indian Institute of Technology Kharagpur	5	West Bengal	East
6	ARI-I-1075	Indian Institute of Technology Kanpur	6	Uttar Pradesh	North
7	ARI-U-0184	Indian Institute of Technology Mandi	7	Himachal Pradesh	North
8	ARI-U-0263	National Institute of Technology Calicut	8	Kerala	South
9	ARI-U-0560	Indian Institute of Technology Roorkee	9	Uttarakhand	North
10	ARI-U-0042	University of Hyderabad	10	Telangana	South East
2. Govt. and Govt. Aided Universities (HEIs in Top 5 Rank)					
Sl No.	Institute ID	Institute Name	Rank	State	Region
1	ARI-U-0308	Institute of Chemical Technology	1	Maharashtra	West
2	ARI-U-0078	Panjab University	2	Chandigarh	North
3	ARI-U-0159	Chaudhary Charan Singh Haryana Agricultural University	3	Haryana	North
4	ARI-U-0123	Anand Agricultural University	4	Gujarat	West
5	ARI-U-0470	Periyar University	4	Tamil Nadu	South
6	ARI-C-6379	Netaji Subhas University of Technology	5	Delhi	North
7	ARI-U-0135	Graduate School of Engineering and Technology, Gujarat Technological University	5	Gujarat	West
3. Govt. and Govt. Aided College/Institutes (HEIs in Top 5 Rank)					
Sl. No	Institute ID	Institute Name	Rank	State	Region
1	ARI-C-41593	College of Engineering Pune	1	Maharashtra	West
2	ARI-C-1345	PES College of Engineering	2	Karnataka	South
3	ARI-C-36969	Coimbatore Institute of Technology	3	Tamil Nadu	South
4	ARI-C-7592	Shri Guru Gobind Singhji Institute of Engineering and Technology	4	Maharashtra	West
5	ARI-C-41046	PSGR Krishnammal College for Women	5	Tamil Nadu	South
6	ARI-C-33641	Veermata Jijabai Technological Institute	5	Maharashtra	West

2. The **ARIIA was instituted in 2019** by the ministry of education to rank educational institutions and universities primarily on innovation related indicators.
3. The **six parameters include programmes and activities on IPR, innovation, start-up and entrepreneurship**, pre incubation and incubation infrastructure, annual budget spent on promoting and **supporting innovation and entrepreneurship activities**, courses on innovation, **IPR and entrepreneurship development**, intellectual property, technology transfer and commercialisation and successful start-ups and funding innovation and start-ups.

WORLD SOLAR BANK

International Solar Alliance (ISA) is preparing a **detailed project report (DPR)** on the **creation of the World Solar Bank** with authorised capital of USD 15 billion to fund projects. The **DPR for the World Solar Bank** is likely to be placed at the **annual ISA Assembly in October this year**, Director General ISA **Upendra Tripathy** said. This assumes significance in view of **India's ambitious target of having 100GW of solar energy by 2022**. India's installed solar power generation capacity **stood at over 35 GW by July this year**, according to the **Central Electricity Authority data**.

What

1. Besides, there is a need for **huge funding for solar projects across the world** for increasing the share of renewable sources in the overall energy mix.
2. ISA announced during the **UN Climate Change Conference in Paris in 2015**, the ISA is a partnership of solar energy rich countries.
3. At present, **there are 121 countries which have agreed to become members of the ISA**.
4. Most of these countries are from **Africa, South-East Asia and Europe**. Pakistan and China are not members of the Gurugram-headquartered ISA.
5. Prime Minister Narendra Modi in his Independence Day address once again asserted the mega plan of having '**One Sun, One World, One Grid**' (**OSOWOG**) or a **trans-national electricity grid supplying solar power across the globe**. The idea was first announced by Modi in 2018 during the first session of the ISA.
6. The **ISA is an alliance of 121 countries** to create a global market system to tap the benefits of solar power and promote clean energy applications.
7. The **authorised capital of the bank would be of the size of USD 15 billion** within the **next five years for funding various solar projects** on a large scale like the World Bank does.
8. Earlier in the day during a curtain raiser virtual press conference of the **First World Solar Technology Summit scheduled on September 8, 2020**, Tripathy informed that the ISA is working on DPR of the World Solar Bank which would be placed in the ISA Assembly for its guidance. A **special finance vehicle** is needed for **funding solar projects**.
9. The ISA has planned to showcase next generation technologies at the First World Solar Technology Summit next month.

NITI AAYOG'S SETS-UP 17 THEMATIC GROUPS

From health and nutrition, concerns of migrant labour and LGBTQI communities to child rights, human trafficking and bonded labour – government's think tank NITI Aayog has **identified 17 thematic areas** and assigned the same to sub groups comprising of representatives from civil society organisation, ministries, departments and UN agencies to enable effective policy making and implementation. NITI Aayog sees this to be a step towards better collaboration and developing the **best policy framework and programme implementation mechanism**.

What

1. **These sub groups will identify bottlenecks, operational difficulties**, policy constraints and best practices to enable effective policy formulation, programme implementation, monitoring and evaluation.
2. The government Think Tank has constituted Civil Society Organisations **standing committee for engagement of CSOs**, voluntary organisations and other development partners for achieving the national development agenda and sustainable development goals in India. Over 92,000 CSOs are already registered with **Niti's Aayog's NGO Darpan Portal**.
3. **The 17 sub-groups have been constituted as part of the NITI CSOs Standing Committee**.
4. **The 17 thematic areas of focus include health and nutrition, WASH (Water, Sanitation & Hygiene)**, migrant labour, LGBTQI, child rights and child protection, human trafficking and bonded labour, women empowerment and security, disability and accessibility, elderly care, sustainable livelihoods, education, entrepreneurship and skill development, disaster relief and environment, youth engagement, micro finance, innovation and technology transfer and mapping, capacity building and regulation of voluntary sector.
5. **The sub groups will identify areas of CSOs engagement for better service delivery** and efficient implementation of schemes.
6. They will deliberate and recommend action on specific issues referred by the government to suggest improvement in laws and policies.
7. These sub groups will also create forums for CSOs to deliberate and recommend specific challenges and promote partnerships between CSOs and the government.
8. They will also guide and work on boosting Implementation of schemes and programmes in **115 aspirational districts** and schemes and programmes for youth in Jammu and Kashmir.

NATIONAL COUNCIL FOR TRANSGENDER PERSONS

The Centre has constituted the **National Council for Transgender Persons** to formulate policies, programmes, legislation and projects regarding members of the community for achieving equality and **full participation by them**. The council was established by the Centre in exercise of the powers conferred by the **Transgender Persons (Protection of Rights) Act, 2019**, according to a gazette notification issued late on 21 August 2020 night.

What

1. According to the Act, the **functions of the council include advising the Centre on the formulation of policies, programmes, legislation** and projects with respect to

- transgender persons; **monitoring and evaluating the impact of policies and programmes** designed for achieving equality and full participation of transgender persons.
2. The other functions of the council are **to review and coordinate the activities of all the departments of government** and other governmental and non-governmental organisations dealing with matters relating to transgender persons, **to redress the grievances of transgender persons**, and **to perform such other functions as may be prescribed by the Centre**.
 3. The council has representatives from community members, **five states and 10 central departments**.
 4. Its **chairperson will be the Union Minister of the Ministry of Social Justice and Empowerment** while the vice-chairperson will be the junior minister in the ministry, according to the gazette notification.
 5. The other members will be from the Ministry of Health and Family Welfare, Ministry Home Affairs, Ministry of Housing and Urban Affairs, Minority Affairs ministry and Rural Development ministry among others, it said.
 6. The **representatives of the state governments and union territories by rotation**, one each from the north, south, east, west and northeast regions have also been announced.
 7. Also, **five representatives of the transgender community, one each from the north, south, east, west and northeast regions** have also been announced.
 8. **Meera Parida, a member from the transgender community, representing the east region** in the council said they will probably be tasked with identifying issues faced by the community members and advise the government on it.

GOVT AMENDED THE CSR NORMS

The government has **amended the corporate social responsibility rules under the companies' law** that is likely to **help boost funding for developing new vaccines, drugs and medical devices** related to the coronavirus pandemic. With the latest amendments, companies engaged in research and development (R&D) activity of new **vaccine, drugs and medical devices** in their normal course of business have been allowed to **undertake R&D activity of new vaccine, drugs and medical devices** related to COVID-19 under the **CSR ambit**.

What

1. This would be applicable for **three financial years** — 2020-21, 2021-22 and 2022-23 — subject to certain conditions.
2. This means that **money spent on such activities would be considered as Corporate Social Responsibility (CSR)** spending under the **Companies Act, 2013**.
3. Under the Act, certain categories of profitable companies are required to shell out at least 2 percent of their three-year annual average net profit towards CSR activities in a particular financial year.
4. The corporate affairs ministry, which is implementing the Act, issued two notifications related to CSR on August 24.
5. Changes have been **made to Schedule VII of the Act** that pertains to CSR activities.
6. **Now, contributions to incubators or R&D projects in the field of science,**

- technology, engineering and medicine**, funded by the central or state governments or public sector undertaking or any agency of the central or state government **would be considered as CSR.**
7. Contributions to public funded universities, Indian Institutes of Technology (IITs), national laboratories and autonomous bodies established under the **Department of Atomic Energy (DAE), Department of Biotechnology (DBT), Department of Science and Technology (DST) and Department of Pharmaceuticals** would also come under the CSR ambit.
 8. Further, the relaxation would be applicable for national laboratories and autonomous bodies under the **Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH)** and Ministry of Electronics and Information Technology.
 9. As per the notification, contributions to other bodies, namely **Defense Research and Development Organisation (DRDO), Indian Council of Agricultural Research (ICAR), Indian Council of Medical Research (ICMR) and Council of Scientific and Industrial Research (CSIR)**, engaged in conducting research in science, technology, engineering and medicine aimed at promoting Sustainable Development Goals (SDGs) would also come under the CSR ambit.
 10. The changes have been made to item nine of Schedule VII.
 11. In another notification, the ministry has amended the CSR rules whereby companies engaged in **R&D activity of new vaccine, drugs and medical devices** in their normal course of business have been allowed to undertake R&D activity of new vaccine, drugs and medical devices related to COVID-19 under the CSR framework. This would be for three financial years — 2020-21, 2021-22 and 2022-23.
 12. One of the conditions is that such R&D activities should be **“carried out in collaboration with any of the institutes or organisations”** in item nine of Schedule VII, as per the second notification.

INTERNATIONAL

NOW CHORA CHURCH AFTER HAGIA SOPHIA

Turkish President **Tayyip Erdogan reconverted the historic Chora church**, one of Istanbul’s most celebrated Byzantine buildings, **into a mosque** on 21 August 2020, a month after opening the **famed Hagia Sophia to Muslim worship**. The **mediaeval Church of the Holy Saviour in Chora**, built near the ancient city walls of Constantinople, contains 14th century Byzantine mosaics and frescoes showing scenes from biblical stories.

What

1. They were plastered over after the city was **conquered by the Muslim Ottomans in 1453**, but brought to light again when – like **Hagia Sophia** – the building was **converted to a museum by Turkey’s secular republic more than 70 years ago**.
2. Erdogan, whose AK Party is rooted in political Islam, has positioned himself as a champion of Turkey’s pious Muslims and last month joined tens of thousands of worshippers in the first prayers at Hagia Sophia in 86 years.
3. The **move was sharply criticised by church leaders** and some Western countries, who said that reconverting Hagia Sophia exclusively for Muslim worship risked deepening religious rifts.

4. **Last year a Turkish court annulled a 1945 government decision converting Chora – known as Kariye in Turkish – into a museum run by the Education Ministry.**
5. On 21 August 2020, an edict signed by Erdogan and published in Turkey's official gazette declared "the **management of the Kariye Mosque be transferred to the Religious Affairs Directorate**, and (the mosque) opened to worship.
6. A church was **first built at the site in the 4th century**, but most of the existing building dates to an 11th century church that was partly rebuilt 200 years later following an earthquake.
7. Erdogan's edict on 21 August 2020 did not say when the first Muslim prayers would be held at Chora, or what arrangements would be made for the Christian artworks there.
8. At **Hagia Sophia**, curtains have been drawn in front of an image facing worshippers of Mary and the infant Jesus.

NEW E-MARKET PLATFORM LAUNCHED

The UAE **has** launched **Agriota**, a **new technology-driven agri-commodity trading and sourcing e-market platform** that will bridge the gap between millions of **rural farmers in India** and the Gulf nation's food industry. Under the initiative, launched earlier this week by the **Dubai's free-zone Dubai Multi Commodities Centre (DMCC)** and the government of Dubai's authority on commodities trade and enterprise, millions of Indian farmers will get an opportunity to connect directly with the entire food industry in the UAE, including **food processing companies, traders** and wholesalers through the **Agriota-E Marketplace platform**.

What

1. The marketplace allows the farmers to bypass **intermediaries, optimising the supply chain and ensuring traceability** to create value for all stakeholders.
2. The online marketplace also provides **end-to-end traceability and transparency** through last-mile verification and extension infrastructure in a **blockchain environment**.
3. Additionally, the introduction of a **proprietary banking system** with a **multi-tier escrow structure**, will guarantee secure transactions of funds when using the platform.
4. The platform takes this **symbiotic relationship** even further, benefitting the millions of farmers throughout India whilst simultaneously providing greater food security for the UAE.
5. The UAE has a **comprehensive plan in place to ensure food security** and champion agribusiness trade facilitation, with the ultimate goal of positioning our nation as a world leading hub in innovation-driven food security.
6. The launch of an **innovative model like Agriota** will inch the UAE closer to the top of the Global Food Security Index.
7. According to officials, such aggregation has the potential to empower local communities, deliver better quality farm-to-shelf products and expand the UAE's long-term food security.
8. Initially, the platform will offer **cereals, pulses, oil seeds, fruits, vegetables, spices**

and condiments.

9. The launch ceremony, which was also attended by Pavan Kapoor, Ambassador of India to the UAE, comes following the **India-UAE Virtual Buyer Seller Meet** titled "**Forge a New Path in COVID-19**" organised on August 20.
10. In 2019, India exported more than USD 38 billion of agricultural and processed food products, with one of their largest markets being the Middle East.

INDIA, ISRAEL SIGN CULTURAL AGREEMENT

India and Israel on 20 August **2020** signed a **cultural agreement** that **outlines a three-year programme of cooperation** to further strengthen their **strategic bilateral relations** by **promoting greater people-to-people exchanges**. The agreement was signed between Israel's foreign minister Gabi Ashkenazi and India's Ambassador to Israel, Sanjeev Singla, at the foreign ministry in Jerusalem.

What

1. Both sides are convinced that this cooperation shall contribute to the development of their relations and to raising awareness, particularly among youth, of the history and culture of the people of both countries and **agree to promote cooperation in order to improve and strengthen mutual understanding** and friendship between the two countries.
2. The **cultural agreement with India is one of a series of agreements** we have and it will be followed by the signing of a water agreement by our Ambassador in India.
3. Israel's Ambassador to India, **Ron Malka, signed an agreement with the state of Uttar Pradesh** earlier on 20 August 2020 **to cooperate in the field of water utility on the Indo-Israel Bundelkhand water project**.
4. The **strategic relationship between India and Israel** is on a qualitatively different trajectory since the historic visit of Prime Minister Narendra Modi to Israel three years ago in July 2017. The agreement will **give further impetus to enhance people-to-people relations**.
5. **This programme of cooperation between the two countries for the years 2020-23** is based on the cultural agreement signed between them on May 18, 1993, a little more than a year after they established full-fledged diplomatic relations.
6. The major areas of cooperation identified **to promote cultural ties include the exchange of culture and art experts**, encouraging cooperation in the protection of cultural heritage and archaeology with the help of **Israel Antiquities Authority (IIA)** and **Archaeological Survey of India (ASI)** and organising literary fests and book fairs while promoting the translation of famous works in each other's languages.
7. The two sides have **agreed to encourage the exchange of culture and art experts, performing arts festivals, plastic arts, photography and design, architecture**, museums and exhibitions, music, dance, dance and theatre by enabling annual visits of experts, artists, producers and curators.
8. Both the countries will be also **working jointly to promote the translation of contemporary prose, poetry** and other literary works into the languages of the other side, besides supporting the participation of poets and writers in festivals and literary events. It has also been agreed to encourage direct contacts between book publishers and national libraries.

CHINA FIRES 'CARRIER KILLER' MISSILE

China's military test-fired two missiles into the South China Sea, including a **carrier killer**, military analysts suggest might have been developed to attack US forces, a newspaper reported on 27 August 2020. The **DF-26B and DF-21D missiles** fired on 26 August 2020 targeted an area between the **southern island province of Hainan** and the **Paracel Islands**. The ministries of defence and foreign affairs in Beijing didn't immediately respond to requests for confirmation.

What

1. Disputes over control of the South China Sea, **one of the world's busiest trade routes**, are a growing irritant in Beijing's relations with Washington and its southern neighbours.
2. The Trump administration this year rejected most of Beijing's claims **to sovereignty over the majority of the disputed sea**, portions of which also are claimed by **Vietnam, the Philippines and other governments**.
3. This launch followed Chinese complaints that a US U2 spy plane **entered a no fly zone declared by Beijing** during a military drill off its northern coast.
4. The **DF-21 is unusually accurate and was dubbed carrier killer by military analysts** who believe it was developed to target U.S. aircraft carriers that might be involved in a potential conflict with China.
5. Beijing has spent heavily over the past two decades on trying to develop missiles, fighter aircraft, nuclear submarines and other weapons to allow China to expand its military reach beyond its shores.
6. The **DF-26B was launched from the northwestern province of Qinghai** while the **DF-21D was fired from Zhejiang province south of Shanghai on the east coast**.
7. The DF-26 is believed to be capable of carrying nuclear or conventional warheads. That would violate the **Intermediate-Range Nuclear Forces Treaty** signed by Washington and Moscow during the Cold War.
8. The Trump administration cited China's development of the DF-26 and similar weapons when it withdrew from the treaty last year.

ECONOMY

EXPORT PREPAREDNESS INDEX 2020

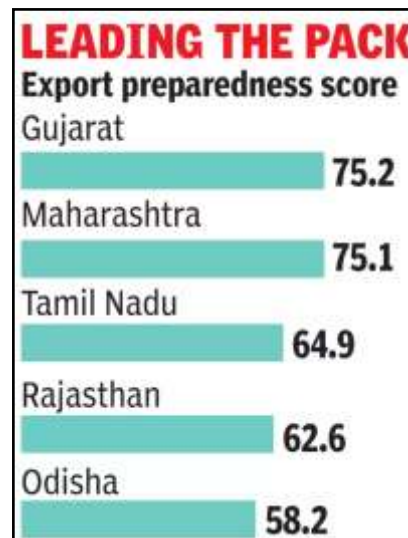
Gujarat has topped the Niti Aayog's Export Preparedness Index 2020 followed by **Maharashtra and Tamil Nadu in the second and third** place respectively, according to the government think tank's report released on 26 August 2020. According to the report, **six of eight coastal states feature in the top ten rankings**, indicating the presence of strong enabling and facilitating factors to promote exports. **Among the landlocked states, Rajasthan has performed the best**, followed by Telangana and Haryana.

What

1. **Among the Himalayan states, Uttarakhand topped the chart**, followed by **Tripura and Himachal Pradesh**; the report said adding that across Union Territories, **Delhi has performed the best**, followed by Goa and Chandigarh.
2. The report noted that **Chhattisgarh and Jharkhand** are two landlocked states that

had initiated several measures to promote exports.

3. Other states facing similar socio-economic challenges can look at the measures taken by Chhattisgarh and Jharkhand and try to implement them to grow their exports, the report noted.
4. Speaking at the launch of the report, Niti Aayog Vice Chairman Rajiv Kumar said **exports are an integral part of Aatmanirbhar Bharat** and the country will have to keep striving to increase the share of exports in GDP and world trade.
5. The Niti Aayog Vice Chairman pointed out that **India's per capita exports are USD 241**, compared to **South Korea's USD 11,900** and **China's USD 18,000**, so there is a huge potential for growth of India's exports, he said adding "states must look at creating a separate department for exports promotion."
6. The government of India has made it clear that production linked incentive (PLI) schemes are critical to promote exports.
7. There is a need to **distinguish between coastal states and landlocked states** because **conditions for exports in coastal states and landlocked states are very different**.



GIS-ENABLED LAND BANK SYSTEM

Commerce and Industry Minister Piyush Goyal on 27 August 2020 launched the **national GIS-enabled land bank system**, which **will help investors to get real-time information** about the **availability of industrial land and resources**. Launching the system, Goyal expressed confidence that **other states/UTs will be onboarded by December 2020**, as the project has been launched for **six states**.

What

1. The system is **being developed by integrating the Industrial Information System (IIS) with the state GIS (Geographic Information System)**.
2. This is a prototype only and will be developed further with inputs from states to make it an effective and transparent mechanism for land identification as well as procurement. **The IIS portal is a GIS-enabled database of industrial areas/clusters across the states.**
3. **More than 3,300 industrial parks across 31 states/UTs covering about 4, 75,000 hectare land** have been mapped on the system.



4. The information available includes forest, drainage; raw material heat maps (agricultural, horticulture, mineral layers); multiple layers of connectivity, the Commerce and Industry Ministry said.
5. The minister called upon the states to collectively work in the spirit of '**Team India**' to enhance industrial activity in the country and attract investment.
6. On Agri export policy, **so far only 14 states have finalised the action plans**, and others should finalise it expeditiously. The minister also stressed on the need for the states to incentivise value addition activity in not only agriculture but also industrial products.

NSFE 2020-2025

The Reserve Bank of India (RBI) on 20 August 2020 came out with a '**5-Core Actions**' approach for **promoting financial education**, which among other things includes **development of relevant content for school children and adults, community participation and collaboration among various stakeholders**. The '**National Strategy for Financial Education 2020-2025**' (NSFE), released by the RBI, has suggested a multi-stakeholder-led approach for creating a financially aware and empowered India. The **five Cs**, outlined by the strategy paper, are: **Content, Capacity, Community, Communication and Collaboration**.

What

1. Strengthening financial inclusion in the country has been one of the important developmental agendas of both the Government of India and the **four financial sector regulators** (RBI, SEBI, IRDAI and PFRDA).
2. **Financial literacy** supports the pursuit of financial inclusion by empowering the customers to make informed choices leading to their financial well-being, according to NSFE.
3. **To achieve the vision of creating a financially aware and empowered India, NSFE has laid down strategic objectives**, like inculcating financial literacy concepts among the various sections of the population through financial education to make it an important life skill, and encourage active savings behaviour.
4. Among the other strategic objectives are encouraging participation in financial markets to meet financial goals and objectives, developing

Flashback

1. Since the launch of the **first NSFE in 2013**, various stakeholders have undertaken several measures to improve the financial literacy of the cross-section of the population in the country.
2. **Financial literacy is defined as a combination of financial awareness, knowledge, skills, attitude, and behaviour** necessary to make sound financial decisions and ultimately achieve individual financial well-being.
3. Based on the review of progress made under the strategy and keeping in view the various developments that have taken place over the last 5 years, the **National Centre for Financial Education (NCFE)** has prepared the **revised NSFE (2020-2025)**, the document said.
4. It was **prepared in consultation with the four financial sector regulators** and other relevant stakeholders.

- credit discipline and encouraging availing credit from formal financial institutions as per requirement, and improving usage of digital financial services in a safe and secure manner.
5. **Managing risk at various life stages through relevant and suitable insurance cover** and plan for old age and retirement through coverage of suitable pension products are the other key objectives laid down in the document.
 6. The document stresses on **development of financial literacy content for school children** (including curriculum and co-scholastic), teachers, young adults, women, new entrants at workplace/entrepreneurs (MSMEs), senior citizens, persons with disabilities, illiterate people.
 7. Update content of financial education in school curriculum for students of classes VI to X, said action plan for NSFE (2020-25).
 8. It also makes a case for **integrating financial education in courses like B.Ed./M.Ed.** besides other teachers' training courses to create a cadre of financially educated teaching professionals. It also calls for development of a financial literacy mobile app, and leverage social media.
 9. NSFE further said the **Technical Group on Financial Inclusion and Financial Literacy (TGFIFL)** would be responsible for periodic monitoring and implementation of the National Strategy for Financial Education.
 10. There would also be periodic monitoring of the activities undertaken by various stakeholders for dissemination of basic, sector-specific, and process literacy.

SCIENCE AND TECHNOLOGY

WORLD'S LARGEST SOLAR TREE AT DURGAPUR

The **CSIR-CMERI, Durgapur, has developed the World's Largest Solar Tree**, which is **installed at CSIR-CMERI Residential Colony, Durgapur**. Prof.(Dr.) Harish Hirani, Director, CSIR-CMERI, while elaborating about the technology stated that, **"The installed capacity of the Solar Tree is above 11.5 kWp**. It has the annual capacity to **generate 12,000-14,000 units of Clean and Green Power"**.

What

1. The **Solar Tree has been designed in a manner to ensure maximum exposure of each Solar PV Panel to Sunlight** and also creation of the least amount of shadow area beneath. There are a **total of 35 Solar PV Panels in each tree with a capacity of 330 wp each**.
2. The inclination of the arms holding the Solar PV Panels are flexible and can be adjusted as per requirement, this feature is not available in **Roof-Mounted Solar facilities**.
3. The energy generation data can be monitored either real-time or on a daily basis.
4. The **CSIR-CMERI developed Solar Tree besides being the World's Largest Solar Tree** also has certain customizable features for application at diverse sites.
5. The Solar Trees were designed in a manner to ensure minimum Shadow Area, thus potentially making these Solar Trees available for widespread usage in Agricultural activities such as High Capacity Pumps, e-Tractors and e-Power Tillers.
6. **These Solar Trees can be aligned with Agriculture for substituting price-volatile**

- fossil fuels.** Each Solar Tree has the potential to **save 10-12 tons of CO2 emissions** being released into the atmosphere as Greenhouse Gases when compared with fossil fuel fired energy generation.
7. Besides, the **surplus generated power can be fed into an Energy Grid.** This Agricultural Model can provide a consistent economic return and help the farmers counter the effects of the uncertain variations in Agriculture related activities, thus, making farming an Economic and Energy Sustainable practice.
 8. **Each Solar Tree will cost Rs 7.5 lakhs** and the interested MSMEs can align their Business Model with the **Pradhan Mantri Kisan Urja Suraksha evam Utthan Mahabhiyan** (PM KUSUM) Scheme for farmers, for developing a Renewable Energy based Energy Grid.
 9. The **solar tree has the capability to incorporate IOT based features**, i.e. round-the-clock CCTV surveillance in agricultural fields, real-time humidity, wind speed, rainfall prediction and soil analytics sensors.
 10. The CSIR-CMERI developed solar powered e-Suvidha Kiosks may also be connected to the Solar Trees for real-time access to the vast majority of agricultural database as well as to the **eNAM i.e. National Agricultural MarketPlace** for instant and real-time access to an unified online market.
 11. This Solar Tree is a Quantum Leap towards making an Energy Reliant and Carbon Negative India.

NEW TECHNIQUE FOR BIOFUEL FROM ALGAE

With India exploring and using different clean energy alternatives to lower its carbon footprints, biofuel from algae of marine origin could be one of the **low-emission solutions** in the country in near future. Indian scientists, under the **INSPIRE programme of ministry of science and technology**, have developed low-cost biodiesel from **microalgae**. The **Innovation in Science Pursuit for Inspired Research (Inspire)** is an innovative programme sponsored and managed by the ministry for attracting talents to research and innovation.

What

1. The ministry on 24 August 2020 claimed in a statement that the "**use of microalgae has been strongly considered for the production of biofuels** since they present a series of advantages over other biofuel feedstock".
2. **Different types of biofuels that have been explored in India** include **molasses, agriculture residue, sugar-containing edible sources** like **sugarcane and sorghum**, starch-containing sources like **corn, edible oil seeds and cassava**, and non-edible oilseeds like **Jatropha**.
3. The **technique to use microalgae** is developed by a team of scientists led by T Mathimani from the **National Institute of Technology (NIT), Tiruchirappalli**.
4. Referring to the technique, the ministry said Mathimani and his team have isolated predominant strains of **marine microalgal species** from the coastal regions of Tamil Nadu for their potential in terms of total organic carbon content and **Triacylglycerides(TAG) content for biodiesel production**.
5. The group will formulate a roadmap by which biodiesel can be produced commercially and can be put in an energy market sustainably.
6. Though **algae is being exploited as a third generation feedstock** for the production

of biofuels such as **bioethanol**, **biodiesel**, **biogas**, and **biohydrogen** in different countries, it does not reach a successful peak due to the higher cost issues in cultivation, harvesting and extraction steps.

7. Noting such limitations, the research paper of the scientists also presents an extensive detail of deriving biofuels from algal biomass from various viable algae cultivation systems.

LITHIUM SULFUR (LI-S) BATTERIES

Researchers at the **Indian Institute of Technology (IIT) Bombay** and **Shiv Nadar University** claim to have **developed a technology** for production of **environment friendly Lithium-Sulfur (Li-S) batteries** which will be **three times more energy efficient and cost effective than Lithium-ion batteries** commonly used at present. According to the team, the **Li-S battery technology leverages principles of green chemistry**, incorporating usage of by-products from the **petroleum industry (Sulfur)**, **agro-waste elements and copolymers such as cardanol** (a by-product of cashew nut processing) and **eugenol (clove oil) as cathodic materials**.

What

1. The researchers said **the technology has the potential to aid multi-billion dollar industries** including tech gadgets, drones, electric vehicles (EV) and several more that depend on such batteries.
2. The research focusses on **principles of green chemistry** to find a solution that addresses requirements of industries and the environment, simultaneously.
3. The **capability of three times more energy density**, coupled with being a significantly safer technology, holds the promise of accelerating the adoption of clean, **battery-led energy across multiple domains**, Bimlesh Lochab, Associate Professor at Shiv Nadar University said.
4. Lochab's team has partnered with Sagar Mitra, IIT Bombay's Professor in the Department of Energy Science and Engineering, to use the research for the development of a **Li-S battery prototype**.
5. The **new battery technology synthesises a bio-based molecule, capable of commercial-scale production**.
6. The research includes a new type of cathode for Li-S batteries, which can help push the promising battery technology to higher performance levels.
7. The **use of cardanol for Sulfur-based structures** as an unconventional application to create cathode materials in this next generation Li-S battery technology has exhibited enhanced capacity retention (among the highest charge capacities reported) and longer battery life in a significantly smaller battery unit.
8. The **Sulfur for the battery is sourced from industrial waste** and **cardanol is sourced from bio-renewable feed-stock** that is easily available, non-toxic and environmentally friendly.

ELON MUSK'S NEURALINK

Billionaire entrepreneur Elon Musk's neuroscience startup **Neuralink** on 28 August 2020 unveiled a **pig named Gertrude** that has had a **coin-sized computer chip** in its brain for two months, **showing off an early step toward the goal of curing human**

diseases with the same type of implant. Co-founded by Tesla Inc and SpaceX CEO Musk in 2016, San Francisco Bay Area-based **Neuralink aims to implant wireless brain-computer interfaces** that include thousands of electrodes in the **most complex human organ to help cure neurological conditions** like **Alzheimer's, dementia** and **spinal cord injuries** and ultimately fuse humankind with artificial intelligence.

What

1. An implantable device can actually solve these problems, Musk said, mentioning ailments such as **memory loss, hearing loss, depression** and **insomnia**.
2. Musk did not provide a timeline for those treatments, appearing to retreat from earlier statements that human trials would begin by the end of this year.
3. **Neuralink's first clinical trials with a small number of human patients** would be aimed at treating **paralysis or paraplegia**, the company's head surgeon Dr. Matthew MacDougall said.
4. Neuroscientists unaffiliated with the company said the presentation indicated that **Neuralink had made great strides but cautioned that longer studies were needed**.
5. Musk presented what he described as the "**three little pigs demo**." **Gertrude**, the pig with a Neuralink implant in the part of its brain that controls the snout, required some coaxing by Musk to appear on camera, but eventually began eating off of a stool and sniffing straw, triggering spikes on a graph tracking the animal's neural activity.
6. The company had **three pigs with two implants each**, and also revealed a pig that previously had an implant. They were "healthy, happy and indistinguishable from a normal pig. Musk said the company predicted a pig's limb movement during a treadmill run at **high accuracy**" using implant data.
7. Musk described Neuralink's chip, which is roughly 23 millimeters (0.9 inch) in diameter, as "a **Fitbit in your skull with tiny wires**."
8. Small devices that **electronically stimulate nerves and brain areas** to treat hearing loss and **Parkinson's disease** have been implanted in humans for decades.
9. Brain implant trials have also been conducted with a small number of people who have lost control of bodily functions due to spinal cord injuries or neurological conditions like strokes.
10. Startups such as **Kernel, Paradromics and NeuroPace** also are trying to exploit advancements in material, wireless and signaling technology to create devices similar to Neuralink.

ASTROSAT MAKES RARE DISCOVERY

AstroSat, India's first multi-wavelength satellite, has **detected an extreme ultraviolet (UV) light from a galaxy** which is **9.3 billion light-years away from Earth**, the Inter-University Centre for Astronomy and Astrophysics (IUCAA) said on 24 August 2020. A release from the **Pune-based Inter-University Centre for Astronomy and Astrophysics** said a global team led by IUCAA scientists have achieved the major breakthrough. **Indias first multi-wavelength satellite**, which has **five unique X-ray and ultraviolet telescopes** working in tandem, AstroSat, has detected extreme-UV **light from a galaxy**, called **AUDFs01**, 9.3 billion light-yearsaway from Earth.

What

1. The discovery was made by an international team of astronomers led by Dr Kanak

- Saha, associate professor of astronomy at the IUCAA, and published on August 24 by 'Nature Astronomy', the release said.
- This team comprised scientists from **India, France, Switzerland, the USA, Japan and The Netherlands**.
 - Saha and his team observed the galaxy, which is **located in the Hubble Extreme Deep field**, through **AstroSat**. These **observations lasted for more than 28 hours in October 2016**.
 - But it took nearly two years since then to carefully analyse the data to ascertain that the emission is indeed from the galaxy. Since **UV radiation is absorbed by Earth's atmosphere, it has to be observed from space**.
 - Earlier, **NASA's Hubble Space Telescope (HST)**, significantly **larger than UVIT (UV imaging telescope)**, did not detect any UV emission (with energy greater than 13.6 eV) from this galaxy because it is too faint.
 - AstroSat/UVIT** was able to achieve this unique feat because **the background noise in the UVIT detector is much less than the ones on HST**, said the release quoting Saha.
 - Saha said they knew it would be an uphill task to convince the international community that UVIT has recorded extreme-UV emission from this galaxy when more powerful HST has not.

Flashback

- AstroSat is the first dedicated Indian astronomy mission** aimed at **studying celestial sources in X-ray, optical and UV spectral bands** simultaneously.
- The payloads cover the energy bands of Ultraviolet (Near and Far), limited optical and X-ray regime (0.3 keV to 100keV).
- One of the unique features of AstroSat mission is that it enables the simultaneous **multi-wavelength observations of various astronomical objects with a single satellite**.
- AstroSat with a lift-off mass of **1515 kg** was launched on **September 28, 2015 into a 650 km orbit inclined** at an angle of 6 deg to the equator by **PSLV-C30** from Satish Dhawan Space Centre, Sriharikota. The minimum **useful life of the AstroSat mission is expected to be 5 years**.

MISCELLANEOUS

FORMER PRESIDENT PRANAB MUKHERJEE PASSES AWAY

Former president Pranab Mukherjee (84) passed away on 31 August 2020 after his condition declined earlier in the day and he suffered a septic shock due to his lung infection, the Army's Research and Referral Hospital said. For the past two weeks, **Mukherjee was in a deep coma and on ventilator support** after he was admitted to the hospital on August 10 and was operated the same day for removal of a clot in his brain. **Mukherjee was the 13th President of India from 2012 to 2017**. The government has announced a **seven-day state mourning**.

What

- Mukherjee, nicknamed 'Poltu da', had **come close to becoming the prime minister in 2012**. In his own words, he got a sense that he could replace Manmohan Singh, who could be sent to Rashtrapati Bhawan. But destiny had other plans.
- Pranab Mukherjee's **political journey started in West Bengal in the 1969 by-election in Midnapore** when he was the election agent for V K Krishna Menon, who

- ran as an independent candidate.
3. He caught the eye of Siddhartha Shankar Ray who recommended him to Indira Gandhi, who gave him a Rajya Sabha seat. Thus at the age of 35, Mukherjee entered the Rajya Sabha.
 4. Besides serving two terms as finance minister, Mukherjee also held the post of commerce minister in 1993 and is known for championing the cause of trade liberalisation.
 5. **Pranab Mukherjee first became the general secretary of the Congress in 1998.** He was a member of the Congress Working Committee for 23 years. For a brief period he was also given the responsibility to head the West Bengal unit of the Party.
 6. **Mukherjee worked under three Prime Ministers – Indira Gandhi, Narasimha Rao and Dr Manmohan Singh.**
 7. He is the **only finance minister to have presented budgets both before the 1991 reforms in the license-permit raj regime as well after the 1991** economic reforms. He took bold decisions after the global economic crisis of 2008 which helped shield the Indian economy.

TEN TIMES MORE INFECTIOUS THAN CORONAVIRUS

On 16 August 2020, Malaysia's health ministry announced that **D614G**, a **mutation of SARS-CoV-2 virus** which **causes Covid-19**, has been detected in at least three of the 45 cases in a cluster that started from a restaurant owner returning from India and breached his 14-day home quarantine. The **D614G mutation** was first detected in February in Europe and since then has become the **dominant variant of SARS-CoV-2**, found in swab samples across the world. As per some researchers, the **mutation is deemed to have given the virus some kind of biological edge** enabling its global spread.

What is D614G

1. **Sars-Cov-2 is the official name of the virus that causes the disease Covid-19.** And **D614G is a mutation of Sars-Cov-2.**
2. **D614G is situated within the protein making up the virus's "spike"** it uses to break into our cells. This **mutation changes the amino acid at position 614**, from **D (aspartic acid) to G (glycine)** — so, **D-614-G.**
3. **Sars-Cov-2 has undergone several mutations** since the pandemic emerged in December 2019. However, only one of these mutations has so far been singled out as possibly altering Sars-Cov-2 behaviour, namely **D614G.**
4. The **mutation appeared sometime after the initial Wuhan outbreak**, probably in Italy. This strain was seen in as many as **97% of samples around the world.**

How does a variant become dominant?

1. **Dr. Bette Korber**, a computational biologist & population geneticist said that the fact the **D614G variant now appears to be dominant everywhere**, including in China, indicates it may have become better at spreading between people than the original version. Whenever the two versions were in circulation at the same time, the new variant took over.
2. In his research paper published in July, Dr Korber had said that the **D614G variant is so dominant**, it is now the pandemic. And it has been for some time - perhaps even since the start of the epidemic in places like the UK and the east coast of the US.

3. So, while evidence is mounting that this mutation is not neutral, it doesn't necessarily change how we should think about the virus and its spread, he wrote.

LAVA TUBES ON MOON AND MARS

Planet Earth have several lava tubes, also called **volcanic caves** that act as “**channels of rivers of lava that at some earlier time flowed downslope from a volcanic vent or fissure**”. Like **Earth, Mars and Moon also have these lava tubes** on their subsurface. However, according to a recent study published in the international journal Earth-Science Reviews, **these tubes are 100 and 1,000 times bigger than Earth on Moon and Mars** respectively.

What

1. **Lava tubes could provide stable shields from cosmic and solar radiation and micrometeorite impacts** which are often happening on the surfaces of planetary bodies, the study's lead author, Francesco Sauro, said.
2. Moreover, they **have great potential for providing an environment in which temperatures do not vary from day- to nighttime**.
3. Space agencies are now interested in planetary caves and lava tubes, as they represent a first step toward future explorations of the lunar surface (see also NASA's project Artemis) and toward finding life (past or present) in Mars subsurface.
4. The **high-resolution pictures of Mars and Moon's lava tubes** were analysed and compared to the ones in Hawaii, Canary Islands, Australia and Iceland by researchers at the Universities of Bologna and Padua.
5. The subsurface cavities that led to the creation of the lava tubes were also analysed and it was found that they can act as shields against cosmic as well as solar radiations.
6. This indicates that lava tubes on these celestial objects can serve as a target for subsurface exploration.
7. We measured the **size and gathered the morphology of lunar and Martian collapse chains** (collapsed lava tubes), using **digital terrain models (DTMs)**, which we obtained through **satellite stereoscopic images and laser altimetry taken by interplanetary probes**, study co-author, Riccardo Pozzobon, added.

NCRP REPORT 2020

The **burden of cancer among men at Mizoram's capital Aizawl is nine to ten times more** than **Osmanabad and Beed** districts in Maharashtra. This is among the major findings of a new '**National Cancer Registry Programme (NCRP) report 2020**'. The report has estimated that **in 2020, cancer cases in the country will be at 13.9 lakh** and are likely to increase to **15.7 lakh by 2025**, based on current trends.

What

1. The **National Cancer Registry Programme (2012-2016) report**, released by **The Indian Council of Medical Research (ICMR)** and **National Centre for Disease Informatics and Research (NCDIR)**, Bengaluru, also found that the burden of cancer in women is seven times more at Papumpare district in Arunachal Pradesh than Osmanabad and Beed districts in Maharashtra.
2. **The cancer incidence rate for the male population ranges from 269.4 per**

- 1,00,000 population in Aizawl district** (highest in India) to 39.5 in Osmanabad and Beed district (lowest in the country).
3. Similarly, the cancer incidence rate for the female population ranges from 219.8 per 100,000 (Papumpare district in Arunachal Pradesh) to 49.4 (Osmanabad and Beed districts).
 4. According to the report, **one out of every four persons in Papumpare district**, in the age group of 0-74 years, faces the possibility of developing cancer through the course of a lifetime.
 5. These estimates are based on information related to cancer collected from **28 Population Based Cancer Registries (PBCRs)**. Additionally, 58 Hospital Based Cancer Registries (HBCRs) provided cancer data.
 6. In 2020, according to the report, **tobacco-related cancers are estimated to contribute 3.7 lakh cases**, or 27.1 per cent of the total cancer burden.
 7. Among women, breast cancer is estimated to contribute 2.0 lakh cases (14.8 per cent of the total cancer burden) and cervix cancer is estimated to contribute 0.75 lakh cases (5.4 per cent), whereas for both men and women, cancer of the gastrointestinal tract is estimated to contribute 2.7 lakh cases (19.7 per cent).
 8. **Cancers related to use of any form of tobacco were found to be the highest in the north-eastern region** of the country and in higher proportions in men.
 9. **Cancers of lung, mouth, stomach and oesophagus** were the most common cancers among men. Cancer of breast and cervix uteri were the most common cancers among women.
 10. A significant increase in the incidence rates of breast cancers in women, and lung and head and neck cancers in both men and women, was observed in most of the registries. However, a declining trend was seen in most of the registries for cancer of the cervix.
 11. **Cancers of lung were diagnosed at a stage of spread to distant sites**, while cancers of head and neck, stomach, breast and cervix were in higher proportions with loco-regional spread.
 12. Multimodality treatment (a varied combination of surgery, chemotherapy and radiation therapy) was administered for cancers of breast and head and neck, while cancer cervix was treated mainly with radiotherapy and chemotherapy, according to the report.

SWACHH SURVEKSHAN 2020

Indore has emerged as the cleanest city in the country for the fourth time in a row according to the **Swachh Survekshan 2020**, the Union Ministry of Housing and Urban Affairs (MoHUA) said. The **Swachh Survekshan 2020 is the fifth edition of the annual cleanliness urban survey** conducted by the MoHUA in which **4,242 cities, 62 cantonment boards and 97 Ganga towns were surveyed**, with feedback received from 1.87 crore citizens.

What

1. According to the survey, **Indore was ranked first among the 47 cities** with a **population of more than one million**, followed by **Surat and Navi Mumbai**.
2. All the National Capital Region cities in this category performed poorly — Ghaziabad was ranked 19, followed by South Delhi (rank 31), North Delhi (rank 43) and East

- Delhi (rank 46).
- Patna, ranked 47, is at the bottom of the list. Other cities that have performed poorly include Greater Mumbai (rank 35), Bruhat Bengaluru (rank 37), Amritsar (rank 39), Kota (rank 44) and Chennai (rank 45).
 - Uttar Pradesh's cities have performed slightly better, with Lucknow on the 12th place, Agra ranked 16, Prayagraj 20, and Kanpur 25.
 - Prime Minister Narendra Modi's constituency of Varanasi is at rank 27. However, in a **separate category of Ganga Towns** having a population of more than 1 lakh, **Varanasi has been ranked the cleanest among 46 towns.**
 - Among cities with a population of 1-10 lakh, Chhattisgarh's Ambikapur has been surveyed as the cleanest city in the country, followed by Mysore and New Delhi. Bihar's Gaya with a rank of 382 is at the bottom in this category.
 - Maharashtra's Karad has been ranked as the cleanest in the category of cities with a population of less than one lakh, followed by Sasvad and Lonavala (also in Maharashtra).

NATIONAL SPORTS AWARDS 2020

The **Indian Sports Ministry** on 21 August 2020 announced the **list of athletes who will be conferred with the National Sports Awards**. The decision to include the names of Mirabai and Sakshi raised a few eyebrows as they had already won the Khel Ratna previously. Last week, the Justice (retd) Mukundakam Sharma-led selection panel had recommended 29 names for the Arjuna Award to the Sports Ministry.

What

- The **five Khel Ratna winners for the year 2020** would be **star cricketer Rohit Sharma, wrestler Vinesh Phogat, Paralympic gold-winner Mariyappan Thangavelu**, TT player Manika Batra, and women's hockey team captain Rani Rampal, the ministry confirmed in a formal press release.
- In a first, the awards will be held virtually on August 29, the National Sports Day, instead of the Rashtrapati Bhavan this year due to the COVID-19 pandemic.

RAJIV GANDHI KHEL RATNA AWARD

S. No.	Name of the Sportsperson	Discipline
1.	Shri Rohit Sharma	Cricket
2.	Shri Mariyappan T.	Para Athletics
3.	Ms. Manika Batra	Table Tennis
4.	Ms. Vinesh	Wrestling
5.	Ms. Rani	Hockey

FIRST INDIAN DAIRY IN GLOBAL TOP 20 LISTS

Amul, Gujarat Cooperative Milk Marketing Federation (GCMMF), has become the **first Indian dairy firm to make a place in the global top 20** list released by Rabobank, a Dutch multinational banking and financial services company. According to the list, **Switzerland's Nestle topped the list** with a turnover of US \$22.1 billion, followed by **France's Lactalis** with US \$ 21 billion turnover. Amul has achieved an annual turnover of \$5.5 billion. **GCMMF (Amul) enters the Rabobank's Global Top 20 Dairy Companies list for the first time at No.16.**

What

1. **US' Dairy Farmers of America** which was **ranked 6th in the 2019 list**, has been **positioned third this year** with a **turnover of US \$20.1 billion**.
2. Among others are **France's Danone at fourth, China's Yili at fifth, New Zealand's Fonterra at sixth**, Netherlands' FrieslandCampina at seventh, China's Mengniu at eighth, Denmark/Sweden's Arla Foods at ninth and Canada's Saputo at tenth position.
3. The dairy sector can give a significant boost to the employment generation in the country. This **sector would alone create 1.2 crore new jobs** over the next 10 years.
4. **India produces 21 per cent of the milk in the world** and India's milk market was growing at 5 per cent, compared to the 1.8 per cent growth in the global milk market.
5. The company plans to roll out two more products i.e. Immuno Chakra Ice Cream, the Health trinity of Haldi-Ginger-Tulsi in tri-colour Ice Cream stick of 60 ml and Star Anise Doodh in the 200 ml can.
6. In July, Amul launched Panchamrit, a mix of five ingredients which is usually offered in temples as 'prasad'. It also launched Janmay range of edible oils, to reduce India's edible oil dependency and help local farmers.