

Manidhanaeyam's

CURRENT AFFAIRS

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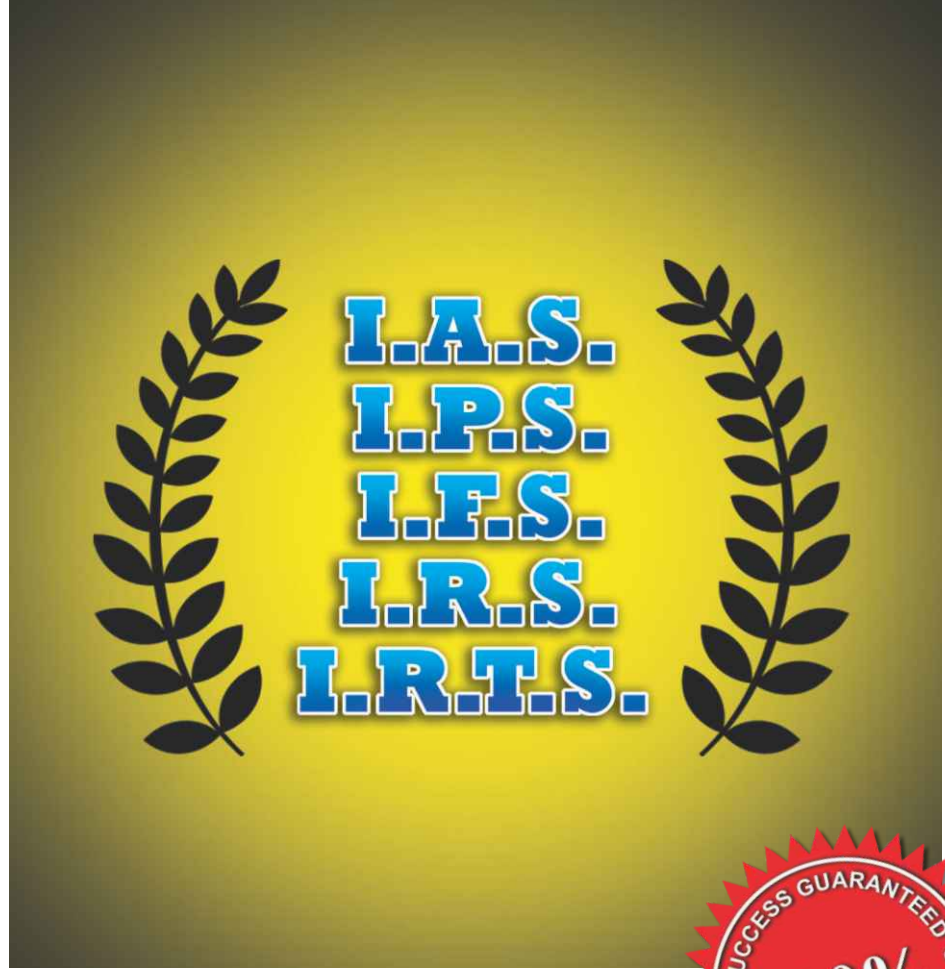
English Monthly

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OCT - NOV 2021

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The Best Academy for Competitive Exam

PRELIMS 2021
G. S. PAPER - 1
CURRENT AFFAIRS
COURSE MATERIAL
(OCT - NOV 2021)

FROM THE DESK OF CHAIRMAN

Dear Students,

“I know of no more encouraging fact than the unquestionable ability of man to elevate his life by conscious endeavour”.

- Henry David Thoreau.

New Year greetings to you all. Let this New Year bring loads of energy, enthusiasm and brightness in all our lives to achieve our heart felt ambition.

In this column every month we intend to share with you some of the ideas that would help to shape you as a great individual.

‘KAIZEN’ in Japanese means ‘constant and never ending improvement’. One must strive consistently and constantly to improve oneself in all areas, that are essential to reach one’s fullest potential. As great acts are performed not through strength but by perseverance.

The trademark of every successful person is dedication to daily improvement in both their personal and professional gives. Effective people do things daily to advance confidently in the direction of their goals. Therefore friends let us work hard consistently to improve ourselves to achieve our goals and aspirations.

Wishing you the very best.

With Regards,

S d/-

(Saidai S.Duraisamy)

Chairman, Manidhanaeyam Trust





MANIDHANAHEYAM FREE IAS ACADEMY

The Best Academy for Competitive Exam

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I CURRENT EVENT - SOCIAL AND SECURITY

1 CENTRE, FCI URGED TO LIFT MORE BOILED RICE FROM TELANGANA

The State government has stepped up its efforts to convince the Centre and **Food Corporation of India (FCI)** to lift more boiled rice from Telangana to protect the interests of paddy farmers. The State has also sought more time for handing over **Custom Milled Rice (CMR)** for 2020-21 Rabi (Yasangi) season.

Food Corporation of India (FCI)

The Food Corporation of India was **setup under the Food Corporation's Act 1964**, in order to fulfill following Objectives of the Food Policy:

- Effective price support operations for safeguarding the interests of the farmers.
- Distribution of food grains throughout the country for public distribution system.

- Maintaining satisfactory level of operational and buffer stocks of food grains to ensure **National Food Security**.

Since its inception, FCI has played a significant role in India's success in transforming the crisis management oriented food security into a stable security system.

In its 50 years of service to the nation, FCI has played a significant role in India's success in transforming the crisis management oriented food security into a stable security system. FCI's Objectives are:

- To provide farmers remunerative prices
- To make food grains available at reasonable prices, particularly to vulnerable section of the society
- To maintain buffer stocks as measure of Food Security
- To intervene in market for price stabilization

Mission

- Efficient procurement at Minimum Support Price (MSP), storage and distribution of food grains.
- Ensuring availability of food grains and sugar through appropriate policy instrument; including maintenance of buffer stocks of food grains.
- Making food grains accessible at reasonable prices, especially to the weak errand vulnerable sections of the society under PDS.

It is one of the largest Corporations in India started by the government and probably the **largest supply chain management in Asia**. It operates through **five Zonal offices and 26 Regional offices**. Each year, the Food Corporation of India purchases roughly 15 to 20 percent of India's wheat output and 12 to 15 percent of its rice output. The purchases are made from the farmers at the rates declared by the Government of India. This rate is called MSP (Minimum Support Price). There is **no limit for procurement in terms of volume**, any quantity can be procured by FCI provided the stock satisfies FAQ (Fair Average Quality) specifications with respect to FCI.

The Food Corporation of India procures **rice and wheat from farmers** through many routes like paddy purchase centres/mill levy/custom milling and stores them in depots. FCI maintains many types of depots like food storage depots and buffer storage complexes and private equity godowns and also implemented latest storage methods of **Silo Storage facilities** which are located at **Hapur in Uttar Pradesh, Malur in Karnataka and Elavur in Tamil Nadu**. The stocks are transported throughout India by means of railways, roadways and waterways and issued to the state government nominees at the rates declared by the

Government of India for further distribution under the Public Distribution System (PDS) for the consumption of the ration card holders. (FCI itself does not directly distribute any stock under PDS, and its operations end at the exit of the stock from its depots). The difference between the purchase price and sale price, along with internal costs, are reimbursed by the Union Government in the form of food subsidy. At present the **annual subsidy is around \$10 billion**. FCI by itself is not a decision-making authority; it does not decide anything about the MSP, imports or exports. It just implements the decisions made by the Ministry of Consumer Affairs, Food and Public Distribution and Ministry of Agriculture.

Food Corporation of India **recently** ventured into **procurement of pulses in various regions from the crop year 2015 -16**, and pulses are procured at market rate, which is a sharp deviation from its traditional minimum support price-based procurement system.

In 2014, Government of India set up a high-level committee under the **chairmanship of Hon'ble Member of Parliament and former Minister of Food and Consumer Affairs and Public Distribution** Shri Shanthakumar to recommend viable solutions regarding restructuring and reorienting the role of Food Corporation of India, and the committee submitted its report to the government. Many of the committee recommendations are under various stages of implementation.

On 27 November 2019, Cabinet Committee on Economic Affairs (CCEA) approved to increase **the authorized capital of Food Corporation of India (FCI)** from existing **Rs. 3,500 crore to Rs. 10,000 crore**.

Custom Milled Rice (CMR)

CMR is manufactured by milling paddy procured by State govt. /State agencies and FCI. In the states like **A.P, Telangana, Punjab, Haryana, Chhattisgarh, Odisha, MP, Tamilnadu, Maharashtra, UP & Bihar** paddy is mainly procured by State government /State agencies and the resultant rice is delivered to State Government and FCI by getting the paddy milled from rice millers.

Major responsibility of procurement of wheat and paddy is borne by the State agencies whereas FCI procures almost 70% of total rice procured for Central Pool.

2.3 Coarse grains - Coarse grains are procured by the State governments based on their plan of procurement with prior approval of GOI & subject to distribution of procured coarse grain under TPDS in the procuring state itself.

3. In **wheat** and paddy procuring States like **Punjab, Haryana & some parts Rajasthan** procurement from farmers is undertaken by the FCI/State Agencies through **Arthiyas** as per State APMC Act. In other States procurement of wheat and paddy is made directly from farmers by FCI/ State Govt Agencies.

After meeting Union Food and Civil Supplies Minister Piyush Goyal the same issue, met **Chairman and Managing Director of FCI Atish Chandra** to reiterate the State's plea for lifting more boiled rice from Telangana, keeping in mind harsh weather conditions during the Rabi season.

Mr. Kamalakar explained to the FCI CMD that huge quantity of paddy would go waste in processing it as raw rice as it would **end up in broken rice in a higher quantity due to the extreme temperatures during the Rabi season and result in huge loss**. "By accepting boiled rice instead of raw rice for Rabi season, huge wastage can be prevented and will help meet the hunger needs," he said.

Further, lifting higher quantity of boiled rice would also help in as a measure to double the farmers' income planned by the Centre. At a time when the State Government was helping farmers in every possible way, it was the responsibility of the Centre to help the community by accepting rice milled from 80 lakh quintals of paddy for the last Rabi season and also extend the time for a month to give one-lakh quintals of CMR pertaining to that season.

On procurement rice pertaining to the current **Kharif (Vanakalam) season from Telangana**, the Minister said that paddy was being cultivated in about 55 lakh acres and requested the FCI chairman to allow the State to procure at least 80 lakh tonnes of paddy.

Senior Congress leader and former minister M.B. Patil played down the controversial demand of 'religious minority' tag for the **Lingayat-Veerashaiva community** and said a decision on this demand will be taken after the State Legislative Assembly elections in 2023.

Mr. Patil said the minority tag would benefit for community in availing reservation in **State and Central government jobs, and seats in educational institutions**. However, the issue would be taken up only after the 2023 Assembly elections in Karnataka and all decisions would be made after arriving at a consensus involving leaders and seers of all sub-sects of the community. There are 99 sub-sects in the community.

History of demand

Former IAS officer S.M. Jamdaar spearheaded the movement for a separate religion tag for Lingayats. **The Justice Nagamohan Das committee**, which was formed in December 2017 to decide on the matter, had suggested that Lingayats be **identified as a separate religion**.

Prior to the 2018 elections, Karnataka Cabinet decided to go ahead with the recommendations of the Justice Nagamohan Das committee. The Congress government sought the Central government's nod for giving separate religion status for Lingayat-Veerashaivas (**followers of Basavanna**).

Basaveshwara (Basavanna)

Basaveshwara, colloquially known as **Basavanna**, was a 12th-century CE Indian **statesman, philosopher, poet, social reformer and Lingayat saint** in the Shiva-focussed bhakti movement, and a Hindu Shaivite social reformer during the reign of the **Kalyani Chalukya / Kalachuri dynasty**. Basava was active during the rule of both dynasties but reached the peak of his influence during the rule of King **Bijjala II in Karnataka, India**.

Basava spread social awareness through **his poetry**, popularly known as **Vachanaas**. He rejected gender or social discrimination, superstitions and rituals but introduced **Ishtalinga necklace**, with an image of the Shiva Linga, to every person regardless of his or her birth, to be a constant reminder of one's bhakti (devotion) to Shiva. **A strong promoter of ahimsa**, he also condemned human and animal sacrifices. As the chief minister of his kingdom, he introduced new

public institutions such as the **Anubhava Mantapa** (or, the 'hall of spiritual experience'), which welcomed men and women from all socio-economic backgrounds to discuss spiritual and mundane questions of life, in open.

The traditional legends and hagiographic texts state Basava to be the **founder of the Lingayats**. The **Basavarajadevara Ragale** (13 out of 25 sections are available) by the **Kannada poet Harihara** (c.1180) is the earliest available account on the life of the social reformer and is considered important because the author was a near contemporary of his protagonist. A full account of Basava's life and ideas are narrated in a 13th-century sacred Telugu text, the Basava Purana by **Palkuriki Somanatha**.

Basava literary works include the Vachana Sahitya in Kannada Language. He is **also known as Bhaktibhandari** (literally, the treasurer of devotion) and Basavanna.

3 ARMY CARRIES OUT ARMoured EXERCISE IN SUPER HIGH ALTITUDE AREA OF LADAKH

The Army conducted an exercise with armoured elements in **the Super High Altitude Area (SHAA) of Ladakh** under the aegis of the Leh based 14 Corps.

This comes in the backdrop of the Army's renewed focus on beefing up armour in high altitude terrain following the deployment of tanks by India and China during the last year stand-off in Eastern Ladakh.

"Lt Gen PGK Menon, General Officer Commanding (GOC), Fire And Fury Corps reviewed the operational preparedness of Snow Leopard Brigade on Thursday through integrated manoeuvre and live fire exercise in SHAA of Ladakh," the Defence PRO in Srinagar said on Twitter.

The **Snow Leopard Brigade is located at Nyoma**, which is very close to the **Chushul range**, according to a defence source.

During the last year stand-off, India and China deployed tanks at SHAA on the South Bank of **Pangong Tso (lake)** at very close proximity, just few 100 metres apart, with their barrels facing each other.

As part of the **first phase of disengagement from Pangong Tso** in February 2021, tanks and armoured elements on the South bank were withdrawn along with frontline troops and other equipment.

Over the last decade, **India has significantly augmented its infrastructure and deployments in Ladakh**. In beginning of 2014, India started deploying tank regiments consisting of **T-72s in Eastern Ladakh**. One tank regiment was deployed in 2014, the second one in 2016 and a third one later, completing the full brigade.

Additional five friction points

In Eastern Ladakh, **India and China have two mutually agreed disputed areas, Trig Heights and Demchok**, and 10 areas of differing perception. Officials said that since the stand-off, **additional five friction points** have emerged. These are **Km 120 in Galwan area, Patrolling Point (PP) 15 and PP17, and Rechin La and Rezang La** on the South Bank of Pangong Tso.

In 2002, India and China exchanged maps of the LAC in the middle and western sectors. While middle sector happened smoothly, in the Western sector, the Chinese saw the map of the Depsang bulge and said 'we are expanding our claim lines' and the exchange failed, the official observed.

While **Demchok** is one of the **two mutually agreed disputed areas** in Eastern Ladakh, Depsang is one of the eight friction points in the area. In Demchok, where there are claims in the **Charding La area**, China has set up tents on this side of Charding nala.

4 THE SNAKE CHARMER: HOW PANDEMIC IMPACTED NOMADIC COMMUNITIES

On a regular day, Pandi, 40, and his caparisoned bull would visit over 150 houses, him singing praises of a deity and foretelling people's future and earned anywhere between ₹200 and ₹400. In a month, after accounting for the upkeep of the bull, Pandi earned an average of ₹4,000 to support his family of six.

G. Kannaiah, from Melaparthibanur in Tamil Nadu's Ramanathapuram district, belongs to the **snake charmer or Kattu Nayakar community**. The men from his community are street performers, snake rescuers and handlers, and the women, soothsayers.

A report documenting the impact of one year of COVID-19 on incomes and inequality by the Centre for Sustainable Employment, **Azim Premji University**, showed a direct relation between mobility restrictions

caused by lockdowns and income loss. A 10% decline in mobility was associated with a 7.5% decline in income. While the impact on incomes has been distressing across the country, in the case of nomadic tribes, the loss of livelihood has been complete.

According to the 2011 Census, **Tamil Nadu has a tribal population of 7.21 lakh, of which some 5.5 lakh are nomadic.** Of the 20 different nomadic communities in the State, **the Narikuravars** make a living selling trinkets such as bead jewellery, the Dombars craft toys with clay and plaster of Paris, and the Kudukuduppai Karars are fortune-tellers. Some communities are street performers, whip-lashers, cane craftsmen and traditional medicine practitioners. They have all mostly led a nomadic life, with permanent settlements being a recent concept.

“Except among the Narikuravars, literacy is low in these communities. Less than 50% have any housing. They live in temporary huts and sheds. Basic amenities like electricity and water are scarce,” she explains.

The establishment of a nomadic tribes welfare department in the State has thus been the community’s primary demand. These communities are collectively grouped under **‘Denotified Tribes of India’**, so called since they were **de-notified from a list that branded them criminal under the colonial Criminal Tribes Act, 1871.** Although the draconian legislation that allowed for the “registration, surveillance and control” of “criminal” tribal communities was revoked in 1949, the stigma and persecution, and disenfranchisement have indeed endured.

Denotified Tribes are the tribes that were listed originally under the Criminal Tribes Act of 1871, as Criminal Tribes and "addicted to the systematic commission of **non-bailable offences.**" Once a tribe became ‘notified’ as criminal, all its members were required to register with the local magistrate, failing which they would be charged with a "crime" under the Indian Penal Code.

The Criminal Tribes Act was repealed in 1949 and thus 'de-notified' the tribal communities. This Act, however, was **replaced by a series of Habitual Offenders Acts**, that asked police to investigate a ‘suspect's criminal tendencies’ and whether their occupation is ‘conducive to settled way of life." The denotified tribes were reclassified as **‘habitual offenders’ in 1959.**

The name ‘Criminal Tribes; is itself a misnomer as no definition of tribe denotes occupation, but they were identified as tribes ‘performing’ their

primary occupation. The first census was in 1871 and at that time there was no consensus nor any definition of what constitutes a ‘tribe’. The terms ‘tribe’ and ‘caste’ were used interchangeably for these tribes.

The UN's anti-discrimination body **Committee on the Elimination of Racial Discrimination (CERD)** asked India to repeal the Habitual Offenders Act (1952) and effectively rehabilitate the denotified and nomadic tribes on 9 March 2007.

In 2008, the National Commission for Denotified, Nomadic and Semi-Nomadic Tribes (NCDNSNT) of Ministry of Social Justice and Empowerment recommended equal reservations, as available to Scheduled Castes and Scheduled Tribes, for around 110 million people belonging to the denotified tribes, nomadic or semi-nomadic tribes in India. Along with the tribes designated as, **‘Nomadic’ or ‘Semi-Nomadic’**, the denotified **tribes are eligible for reservation.**

5 IS INDIA'S MOST ASPIRATIONAL GENERATION - ITS MILLENNIALS ARE QUICKLY BECOMING ITS MOST ANXIOUS ONE?

It was November 2018 in **Jabalpur, Madhya Pradesh**. I was at the city's famous Russel Chowk, talking to young people gathered there in the evening. Cars were honking and young men in bright polyester shirts with elaborately coiffed hair and multicoloured sunglasses were racing on their two-wheelers. The air, quickly cooling down, smelled of diesel and dust.

Born between 1981 and 1996, roughly numbering more than 440 million, they are, without any doubt, the largest millennial cohort on the planet. Like every other generation in India, millennials are incredibly diverse: with not just significant economic division, but also important linguistic, regional, caste, gender and religious differences, which make the generation difficult to understand as a cohesive group. Yet, millennials have the potential to be India's most significant generation.

India's median age, according to a 2021 estimate by the CIA World Factbook, is **28 years**. This means that half of its population is under 28. By contrast, the **median age in the world's top three economies** - namely, **the U.S., China, and Japan** - is **38, 37 and 47 years** respectively. Among the **top 10 economies in the world**, **India has the youngest population** followed distantly by Brazil, which has a median age of 32 years. By the end of 2021, two-thirds of India's population will be within the working age of 20 to 35 years.

These young Indians will be the world's largest labour force and market for goods and services. This is what is referred to as **India's 'demographic dividend'**. It was believed that with the right education and investment in human capital, a growing middle-class, and an increase in foreign investment, India would not only enjoy high single-digit or even double-digit GDP growth, but its millennials and working-age population would power the country to transform itself like many East Asian success stories.

6 BOMB THREAT TO INDIGENOUS AIRCRAFT CARRIER UNDER COCHIN SHIPYARD

The police have registered cases under **Cyber Terrorism** after **Cochin Shipyard** received e-mails twice in the past 20 days, warning of bombs going off in the shipyard where the indigenous aircraft carrier (IAC) that will be christened **INS Vikrant** and is undergoing sea trials, was built.

The Ernakulam South Police Station has registered cases under Section 66 F (**cyber terrorism, a charge that can attract punishment up to life imprisonment**) of IT Act and Section 384 of IPC.

The police and the CISF have stepped up security of the shipyard and the waterbody in its vicinity following the bomb threats. The Navy had already stepped up its vigil following the current geopolitical situation in the country's neighbourhood, Naval sources said.

Definition as per Information Technology Act, 2000 (IT Act)

Section 66F of the IT Act defines 'Cyber Terrorism' as all those acts by any person with an intent to create threat to the unity, integrity, sovereignty and security of the nation or create terror in minds of people or section of people by way of disrupting the authorised access to a computer resource or getting access to a computer resource through unauthorised means or causing damage to computer network. If these acts cause injuries to persons, cause the death of any

person, damage or destruct any property, cause disruption of essential supplies or services, or negatively affect the critical information structure, they become punishable in nature.

It also includes all those acts committed knowingly or intentionally in connection to getting access to a computer resource in an unauthorized way and that the data so obtained was restricted in the interests of the sovereignty and integrity of the nation.

Modes of Cyber Terrorism

The terrorists commit the crime of cyber terrorism in any or all of the following ways:

1. Hacking into the systems and databases owned by the government of the target country and appropriating sensitive information of national importance.
2. Destructing and destroying the entire database of the government hosted on cyber space along with all backups by introducing a virus or malware into the systems.
3. Temporarily causing disruptions to the network of the government of the target nation and distracting the top officials so that they can pursue other means of terrorism.
4. Distributed denial of service attack ("DDOS"): The terrorists through this attack first infect the systems by introducing viruses and then take control over the systems. The systems are then accessed by the terrorists from any location who manipulate the data and access the information.

International Telegraph Union-United Nations

International Telegraph Union (ITU), a specialised agency of the United Nations, is entrusted with

the responsibility of addressing issues relating to information and communication technologies. One of the basic roles of ITU is to build cyber security in all its member countries and ensure international cooperation. To achieve this, an agenda called the **Global Cyber security Agenda was launched in 2007** by the ITU which must be followed by all the member nations.

Indian Computer Emergency Response Team (CERT-In)

As per **Section 70B of the IT Act**, the CERT-In team is set up which provides immediate alerts of incidents challenging cyber security and also lists out the emergency measures for handling incidents threatening cyber security of the Nation.

Cyber Security Policy, 2013

For the first time in history, **in the year 2013 India** introduced its national level cyber security policy. This policy lays down the broad framework for upholding and protecting the cyber space security. The main aim of this policy is to create a broad umbrella of cyber security framework in the country so that the Indian cyber space is secure and free from any kind of attacks both by terrorists and other anti-social elements.

7

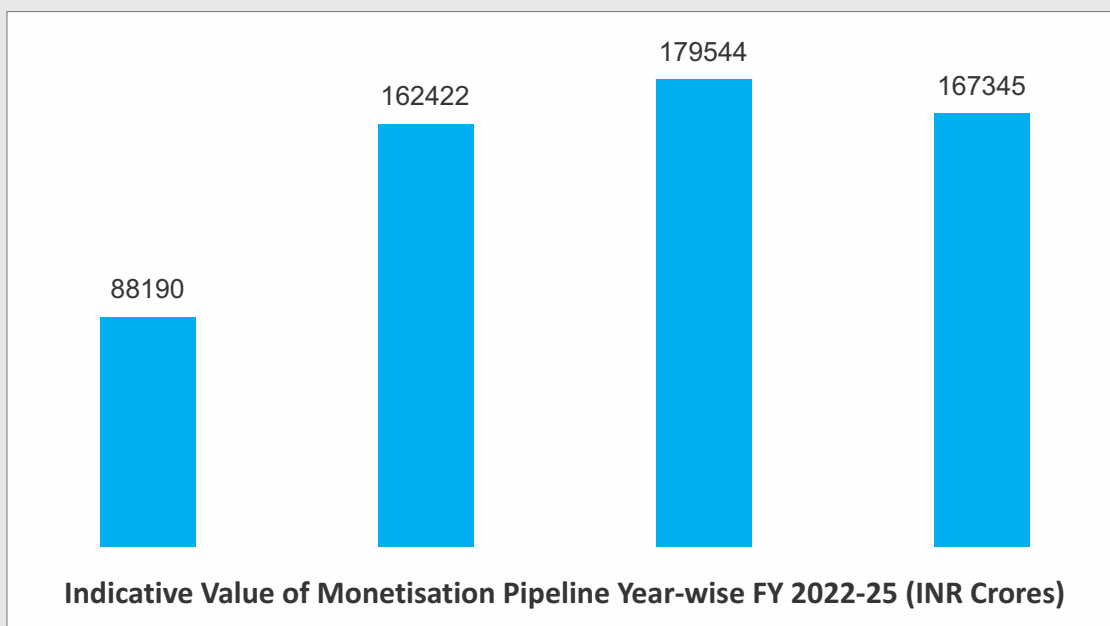
NATIONAL MONETISATION PIPELINE AND THE INFRASTRUCTURE DEFICIT

The government's announcement of the **National Monetisation Pipeline (NMP)**, a scheme **to transfer the rights to operate public infrastructure for a fixed period, has received attention in the media.** We need infrastructure not only to speed up growth in a slackened economy but also to lead a dignified life, even after we have seen off the COVID-19 pandemic.

Union Minister for Finance and Corporate Affairs, Smt Nirmala Sitharaman, launched the asset monetisation pipeline of Central ministries and public sector entities: 'National Monetisation Pipeline (NMP Volumes 1 & 2)'. NITI Aayog has developed the pipeline, in consultation with infrastructure line ministries, based on the mandate for 'Asset Monetisation' under Union Budget 2021-22. NMP estimates aggregate monetisation potential of Rs 6.0 lakh crores

through core assets of the Central Government, over a four-year period, from FY 2022 to FY 2025.

Asset monetisation, based on the philosophy of Creation through Monetisation, is aimed at tapping private sector investment for new infrastructure creation. This is necessary for creating employment opportunities, thereby enabling high economic growth and seamlessly integrating the rural and semi-urban areas for overall public welfare.



Imperatives for Core Asset Monetisation

The framework for monetisation of core asset monetisation has three key imperatives.

- Monetization of 'Rights' not 'Ownership', Assets handed back to the government at the end of transaction life
- Brownfield de-risked assets, stable revenue streams
- Structured partnerships under defined contractual frameworks with strict KPIs & performance standards

NMP is envisaged to serve as a medium-term roadmap for identifying potential monetisation-ready projects, across various infrastructure sectors. CEO, NITI Aayog said, “The NMP is aimed at creating a systematic and transparent mechanism for public authorities to monitor the performance of the initiative and for investors to plan their future activities. Asset Monetisation needs to be viewed not just as a funding mechanism, but as an overall paradigm shift in infrastructure operations, augmentation and maintenance considering

private sector's resource efficiencies and its ability to dynamically adapt to the evolving global and economic reality. New models like Infrastructure Investment Trusts & Real Estate Investment Trusts will enable not just financial and strategic investors

but also common people to participate in this asset class thereby opening new avenues for investment. I hence consider the NMP document to be a critical step towards making India's Infrastructure truly world class."

This includes selection of de-risked and brownfield assets with stable revenue generation profile with the overall transaction structured around revenue rights. The primary ownership of the assets under these structures, hence, continues to be with the Government with the framework envisaging hand back of assets to the public authority at the end of transaction life.

A significant criticism of the NMP is that the transfer would end up **creating monopolies**, leading to a rise in price. The creation of monopolies through public policy would be an embarrassment alright. However, the claim of an inevitable monopolisation is exaggerated as the outcome would differ according to the type of infrastructure.

Monopolisation is inevitable in the case of highways and railway lines, while it is not in the case of warehouses as all the warehouses need not be sold to a single bidder. On the issue of the price, **Rajiv Kumar, Vice-Chairman of NITI Aayog**, has emphasised that the price would be regulated and any increase of it capped in line with inflation when the government signs the contract with the concessionaire.

Whether private parties would be open to such an arrangement is a different question. And this really is the point. While the government may have announced its expectation of the proceeds from the monetisation, we are yet to ascertain the private sector's interest in it. The NITI Aayog has flagged the success of the **public-private partnership (PPP) governing the Mumbai-Pune Expressway**, but there is also the unhappy experience of a leading infrastructure company opting out of the agreement to run the **Delhi Airport Express Rail Link** very early on, causing a disruption.

Most infrastructure comes in the form of a public good, even when it may not be a natural monopoly. No wonder then that it has been built and managed by the public sector the world over. But the possibility that the price may rise after a transfer of public infrastructure to the private sector is not a good reason to oppose it. **India's infrastructure has not expanded precisely** because the assets generate too little revenue for even their maintenance, leave alone upgradation, due to pricing practices in the public sector. This has held back growth of the economy. Moreover, it cannot simply be assumed that monopoly would lead to a higher price. The outcome would depend upon the costs of the concessionaire, which may well be lower than that of the public entities currently managing India's assets. A comparison of the fares of Air India with that of private airlines is enough to see this.

Is monetising public assets a good idea?

The important consideration in an evaluation of the NMP would be the volume of funds expected to be generated. **The government has announced an indicative value of ₹6 lakh crore accruing over four years.** This is extraordinarily low in relation to two comparators. First, it is only 10% higher than the budgeted capital expenditure of the Government of India actually for 2021-22. Next, see it in relation to the figure of ₹100 lakh crore estimated as the infrastructural investment India needs. This was announced by Finance Minister Nirmala Sitharaman in her first Budget of 2019 and repeated by Prime Minister Narendra Modi in all his subsequent Independence Day speeches. Any claim of the innovativeness of the NMP pales beside this astute estimation made by the government itself. As for the carping by the Opposition, it distracts attention from the severe infrastructural deficit we face and the need to erase it.

India's **B.Sc (nursing programme)** has undergone its first major overhaul after 1947, making it a competency-based nursing curriculum. To be implemented from January 2022, the revised curriculum has been standardised, updated and aimed at bringing in uniformity in nursing education across India.

Standardization - Updation of Nursing:

Medical ethics has been introduced for the first time. The new system now adopts a credit-based, semester pattern with more emphasis on acquiring competency in each area of study. Also, forensic nursing and nursing informatics have been introduced in the syllabus.

Dr. Satendra Singh who teaches in a medical college and is a guest faculty at Florence Nightingale Nursing School at GTB Hospital, said the **Indian Nursing Council (INC)** has revised, and developed the syllabus under Section 16 of the **Indian Nursing Council (INC) Act**, to ensure uniform standard of nursing education in the country.

"The revised syllabus, which is the **first major overhaul after 1947**, has the word 'dignity' in at least six places which is a welcome addition and the introduction of ethics is also an enhanced addition," said Dr. Singh.

Disability ignored

He added that unfortunately **the revised curriculum does not include disability rights** as well as disability competencies.

"It still includes the pejorative expressions 'handicapped', 'mentally challenged' and physically challenged. The Rights of Persons with Disabilities Act mandates inclusion of disability rights in the higher education. Curriculum also excludes gender expression and identity components which Transgender Persons Act mandates be included," he said. He said that based on the new curriculum, **simulation based training is given specific importance in practical** (10% of the practical are in the simulation lab).

Only Science students

"So students will go to the clinical area after the compulsory training in the simulation laboratories. Also the gazette **does not permit** the admission for **non-science background students for B.Sc. Nursing program and minimum qualifying marks for entrance test shall be 50%**. In the university theory paper pattern (For 75 marks), multiple choice questions have been added," said Dr. George.

"The new system has also brought in mandatory modules for each specialisation and the student has to pass in all mandatory modules placed within courses and the pass mark for each module is 50%," he said.

As per the new norms, **colleges of nursing should mandatorily have 100 bedded parent or own hospitals**. The trustee/ member/ director of the trust or society or company would not allow the hospital to be treated parent/ affiliated hospital to any other nursing institution and will be for a **minimum 30 years**. The beds of parent hospital shall be in one Unitary Hospital i.e. in the same building/same campus. The revised rules also state that no institution or university will modify the syllabi prescribed by the Council for a course or program. However they can add units or subjects if required. "It is mandatory that **an institution shall have its own building within two years of its establishment**," the revised rule states.

The U.K. government brought into effect the **Age Appropriate Design Code or the Children's Code**, as an amendment to the **Data Protection Act, 2018**, operationalising a set of regulations that will make using the digital space safer for children. While the Code is officially in place only in the U.K., tech majors such as TikTok, Instagram and YouTube have tightened safety rules for children, and campaigners hope this will become the norm globally.

What is the Children's Code?

The Children's Code is a data protection code of practice for online services likely to be accessed by children. As **5Rights Foundation**, which spearheaded the movement, said, "It has the potential to completely transform the way that companies collect, share and use children's data, requiring them to offer children a high level of privacy protection by default." It sets out 15 standards for online services, including in apps, games, toy and devices and even news services. Unless the service provider is able to prove that children do not access the service at all, it is required to consider making changes as per the Code.

What are the threats to children online?

Research conducted by 5Rights and Revealing Reality pointed out that within 24 hours of a social media profile being created, children were being targeted with graphic content. It established the pathways between the design of digital services and the risks children face online. According to 5Rights,

1. It shows that services such as Facebook, Instagram and TikTok are allowing children, some as young as 13 years old, to be directly targeted within 24 hours of creating an account with a stream of harmful content.
2. Despite knowing the children's age, the companies are enabling unsolicited contact from adult strangers and are recommending damaging content, including material related to eating disorders, extreme diets, self-harm and suicide as well as sexualised imagery and distorted body images.
3. Further, they concluded that even if the services were not conceived with the intent of putting children at risk, they are by no means 'bugs' or mistakes in the code that allow such errors to creep up on children, unbeknownst to the service providers. "These are not 'bugs' but features. Revealing Reality interviewed engineers and designers who explained they design to maximise engagement, activity and followers - the three drivers of revenue, not to keep children safe."

U.K.'s Information Commissioner Elizabeth Denham said, "**Data sits at the heart of the digital services children use every day.**" From the moment a young person opens an app, plays a game or loads a website, data begins to be gathered.

Who does the Code apply to?

The Code, according to 5Rights, applies to "**information society services likely to be accessed by children**". The definition of an ISS is "**any service normally provided for remuneration, at a distance, by electronic means and at the individual request of a recipient of services**". This includes apps; **programs; search engines; social media platforms; online messaging or internet-based voice telephony services**; online marketplaces; content streaming services (like video, music or gaming services); online games; news or educational websites; and any websites offering other goods or services to users on the internet. Electronic services for controlling connected toys and other connected devices are also ISS. The code applies to the U.K. based companies and non-U.K. companies that use data of children in the country.

Will children in India benefit from the Code?

It is rooted in the **United Nations Convention on the Rights of the Child** that recognises the special safeguards children need in all aspects of their life.” John Carr, online safety expert based in the U.K., says on his blog that the UNCRC put in an addition, General Comment 25, which looked at child rights in the context of a digital environment. If tech giants universalise their safety architecture, children across the world will benefit from the Code. However, child rights activists say it is high time that the Indian government incorporated child safety into its social media agenda.

Conventional manufacturing, CNC manufacturing, wood furniture making, Apparel manufacturing, additive manufacturing are all part of the production labs. There are full fledged E rickshaw manufacturing, apparel manufacturing, wood engineering labs on campus.

The University has published over 50 patents, copyrights as well as design patents to its name. 50 percent of its revenue come from training, production and product development.

10 LIBERAL EDUCATION - CURIOSITY AND ABILITY TO LEARN

Indian higher education should develop students with an ability to be curious, question everything, be articulate, and able to solve problems proactively.

At a webinar on liberal education hosted by Sai University, panelists pointed out that the traditional system of acquiring knowledge did not hold meaning any more. Instead, candidates with skills such as being able to communicate clearly and offer solutions to problems, will be much in demand in future.

Benefits of Liberal Education:

Infosys founder N. R. Narayana Murthy believes that **liberal education** enhances curiosity, improves ability to think critically and independently, and could be a force in solving the problems of our society. He suggested an education model that can provide curiosity, critical thinking, and proactive problem solving.

K.V. Ramani, founder of Sai University, said liberal education should go across disciplines and permit students to pick a group of subjects that interests them instead of the current trend of choosing a course based on marks and the job it can land.

Sai University's founding Vice-Chancellor Jamshed Barucha that said at a time when the country was introducing a National Education Policy, “we have to move very fast to prepare our youth and maximise their innate talent. That will be key for the success of India”.

“We see liberal education as a full spectrum of disciplines, of occupations, of life aspirations, including technology,” he said, adding that the institution had modelled its curriculum on “the Harvard model”, allowing a student to study data science, music and philosophy.

11 WOMEN - TO ENTER NATIONAL DEFENCE ACADEMY, CENTRE INFORMS SC

The Union Government Informed the Supreme Court that it had taken a decision to allow **women entry** into the **National Defence Academy (NDA)**, so far a male bastion for recruitment into the Armed Forces. If this decision comes through formally on paper, **women can prepare for a career in the Armed Forces immediately after Class 12.**

NATIONAL DEFENCE ACADEMY (NDA)

The National Defence Academy (NDA) is the **joint defence service training** institute of the Indian Armed Forces, **where cadets of the three services i.e. the Indian Army, the Indian Navy and the Indian Air Force train together** before they go on to respective service academy for further pre-commission training. The NDA is located in **Khadakwasla, Pune, Maharashtra**. It is the first tri-service academy in the world.

The alumni of NDA include 3 Param Vir Chakra recipients and 12 Ashoka Chakra recipients. **NDA has also produced 27 service Chiefs of Staff** till date. The current Chiefs of Staff of the Army, the Navy and the Air Force are all NDA alumni from the same course. **The 137th course graduated on 30 November 2019**, consisting of 188 Army cadets, 38 Naval cadets, 37 Air Force cadets and **20 cadets from friendly foreign countries**.

“There is good news. The Forces at the highest level and the government has taken a decision last evening to induct girls for permanent commission through the National Defence Academy,” **Additional Solicitor General Aishwarya Bhati** informed a Bench led by Justices Sanjay Kishan Kaul and M.M. Sundresh.

The Bench asked the government to file an affidavit in this regard. It said the Armed Forces was a respected institution, but it had more to do regarding **gender equality**. The court admitted that it was not a happy situation for it to constantly nudge the authorities into taking action on bettering gender representation. The Bench said authorities needed to act by themselves. Ms. Bhati urged the court for the time being to maintain status quo about the admissions to NDA in the present academic year. The law officer said the NDA exam, originally scheduled for September 5, **had been postponed to November 2021**

On August 2021, the court had issued an interim order allowing women candidates to take the NDA exam, which was then scheduled on September 2021. The court had also then questioned **why “co-education is a problem” in the Armed Forces**.

The court had orally observed that it was “absurd” that women were not allowed to appear for the NDA exam even after the Supreme Court, in a judgment, had directed **permanent commission** for women in the Army.

On February, 2020, the Supreme Court had upheld permanent commission for women officers. The court had dismissed the government’s submissions that **women were physiologically weaker than men as a ‘sex stereotype’** and declared that Short Service Commission (SSC) women officers were eligible for permanent commission and command posts in the Army irrespective of their years of service.

“Women officers of the Indian Army have brought laurels to the force... Their track record of service to the nation is beyond reproach. To cast aspersion on their abilities on the ground of gender is an affront not only to their dignity as women but to the dignity of the members of the Indian Army – men and women – who serve as equal citizens in a common mission. The time has come for a realisation that women officers in the Army are not adjuncts to a male-dominated establishment whose presence must be ‘tolerated’ within narrow confines,” Justice Chandrachud had observed in a 54-page judgment in the Army case.

12 REFINING THE RESERVATION POLICY

In February, just before the Election Commission announced the schedule of the State election, the Tamil Nadu Assembly adopted a Bill to provide **10.5% reservation for the Vanniyakula Kshatriyas** within the quota of Most Backward Classes (MBCs) and Denotified Communities (DNCs). In May, relying on the **102nd Constitution Amendment**, the Supreme Court reiterated the constitutional position that States did not have the power to identify “socially and educationally backward” classes (SEBCs). This evoked a strong

reaction from political parties, forcing the Centre to pass in August the 105th Amendment which again empowers States or Union Territories to prepare their own lists of SEBCs. From 2021 onwards, 27% of the all-India quota for admissions for medical and dental courses will be reserved for Other Backward Classes (OBCs) and 10% for economically weaker sections (EWS). This was an outcome of the judicial intervention and legal battles of parties such as the AIADMK and the DMK.

Breaching the Cap

All these developments have given a fillip to the demand for a caste-based census and removal of the 50% cap on reservation. Those advocating for this argue that only a caste-based census can bring to the fore the composition and numerical strength of various castes. Using this as the basis, the 50% cap on reservation can be breached.

There have been a few attempts in the last 10 years at caste enumeration, but they did not yield the desired results. The 2011 Socio-Economic and Caste Census's report was made public five years ago but without the data on caste. In Karnataka, a similar exercise was launched in 2015. The report is still not out. In Tamil Nadu, a one-man commission was constituted in December 2020 to collect data on castes. But six months later, the commission was wound up.

It is natural that political parties will not agree with the findings of a **caste-based census** - however well it may have been conducted — is because there is no provision in the Constitution to link the quantum of reservation to the population of the OBCs.

A reading of **clauses (4) and (5) of Article 15 and clause (4) of Article 16** of the Constitution reveals that the scheme of reservation for the SEBCs is permissible but meant only for those OBCs which are “not adequately represented” in the services in the State. As laid down in the Indra Sawhney case (1992), there must be **extraordinary circumstances to justify** the quantum to exceed the cap. Tamil Nadu is a classic case where the 50% ceiling was breached early. The State provides 69% quota for Backward Classes, MBCs, Scheduled Castes (SC) and Scheduled Tribes (ST). But the scheme of quota even in Tamil Nadu was not framed keeping in mind the population of the reserved communities. According to the Second Backward Classes Commission, the population of the Backward Classes, MBCs and the DNCs in the State was about 67%, a figure that the State government still uses. In addition, SCs and STs account for 21.11%, as per the 2011 Census. Several other States have breached the cap. They have adopted the 10% quota for EWS too. However, while highlighting the cause of the Backward Classes, political parties should keep in mind the rationale behind the cap. The Supreme Court, in the Maratha case of May 2021, said: **“The 50 per cent ceiling limit for reservation laid down by [the] Indra Sawhney case is on the basis of principle of equality as enshrined in Article 16 of the Constitution.”**

Need for Sub-classification

The **National Commission for Backward Classes emphasised in 2015** more on the need for “classification of OBCs” than on streamlining the provisions on creamy layer to ensure fair implementation of the reservation policy. It is hoped that the **Rohini Commission**, constituted by the Centre in October 2017 for the purpose of sub-categorization of communities in the Central list of OBCs, completes its work in three or four months. Some States and Puducherry have already completed the task of sub-categorisation.

The parties should also take a dispassionate look at the concept of creamy layer. Fifty years ago, Tamil Nadu's First Backward Classes Commission recommended that the **‘affluent sections’ in the backward classes** should be “precluded from reservation” for the reason of equity. The annual income limit is one of the parameters that determine the creamy layer. **Since September 1993, this was revised only five times** against the norm of revision every three years. In addition to frequently revising the income limit, the Central government should consider, while revising the limit, many factors such as the trend of rise in GDP, inflation, per capita income and rise in the cost of living. Even as there is a strong case for increasing the

present limit of ₹ 8 lakh per annum for determining the creamy layer, the definition of income needs to change. At present, income from salary and agriculture are not considered but **'income from other sources' is taken into account.**

This stipulation on the nature of source of income not only complicates the situation but is also unfair to candidates of those whose parents may earn marginally higher income 'through other sources' than the ceiling.

Besides, the vacancies in the posts of OBCs have to be filled expeditiously. The **Parliamentary Committee** had said that as on January 1, 2016, OBC employees in 78 ministries and departments of the Central government constituted only 21.57% against the quota of 27%. In respect of Groups A and B services, the share of OBCs was much lower. This only underscores the need for the Centre to conduct special drives frequently to fill the vacancies. Such an approach will take care of concerns in certain sections that the enforcement of 'stringent norms' of the creamy layer might not serve the objective of the 27% quota scheme.

13 WHY HASN'T MARITAL RAPE BEEN CRIMINALISED IN INDIA YET?

In 2017, the Supreme Court, in **Independent Thought v. Union of India**, refused to delve into the question of marital rape of adult women while examining an exception to Section 375 (rape) of the Indian Penal Code (IPC) which allows a man to force sex on his wife. Recent **rulings by High Courts have been contradictory** - one backed marital rape as a valid ground for divorce, while another **granted anticipatory bail to a man** while concluding that forcible sex is not an "illegal thing". Why do differences persist despite the **Justice J.S. Verma Committee recommendation to criminalise marital rape?**

Recent rulings by High Courts pointing out that any sexual act between a man and his wife, even if it involves force, is not rape perhaps highlights the lacuna in the IPC. Why does a provision like this exist in the IPC in the first place?

Section 375 of the IPC defines the offence of rape. It lays down which physical acts are required to make out the offence, and it is a very broad definition. The **second important element** of this definition is consent. Where these acts are done without the consent of the woman, then the offence of rape is made out. This is the general rule, but there is an exception, which says that **sexual acts by a husband with his wife, if she is 18 years of age and above, would not be rape.** While the rest of the provision is centred on consent, this exception does not talk about consent at all. It creates the legal fiction that a wife always consents to her husband, which in effect means that her non-consent is irrelevant. It is of course possible for there to be reprieve for **rape within a marriage**, but not as rape. If there are physical injuries, then there can be reprieve for that separately. **Marital rape may be recognised as a form of cruelty, it may be a ground for divorce, but it is not punished as rape,** which is a very distinct wrong and has very distinct terms.

That is where the lacuna in the law lies. Insofar as fixing it is concerned, either Parliament may legislate and remove this exception, or a constitutional court has to strike it down.

Background: Partly because **we inherited an IPC prior to the enactment of the Constitution**, The so-called marital rape immunity or the exception to rape, as we have structured it in our penal code, has been done away with in other jurisdictions, and rightly so. Marital rape today exists in a very unique sort of stratosphere wherein it can be a ground for cruelty and therefore, for divorce under the personal laws, but it will not render the offender guilty of the offence itself.

Where Does The Fault Lie?

1. Primarily, it should have fallen on Parliament to legislate and remove this exception. But we should also keep in mind that courts have noted the cruelty of this exception and they have acknowledged its problems. They have not gone on to strike it down entirely. As far as Parliament is concerned, it is quite common to leave to the court legislation that may not give very good political returns.

Why were the Justice J.S. Verma Committee recommendations on marital rape not adopted when the criminal law was amended in 2013?

Parliament did miss an opportunity to enact changes, as recommended by the **Justice Verma Committee**. The official response was that they wanted further discussions around marital rape laws before they could enact it because it involves other questions of law as well.

The Courts might have got into these matters in the **Independent Thought case in 2017**. Under **Article 142**, the Supreme Court has powers almost equivalent to that of a lawmaking power. Like with the **Navtej Johar case (2018)** when the Supreme Court missed an opportunity to provide the entire spectrum of civil marital inheritance rights to non-heterosexual couples, the Supreme Court equally missed an opportunity during the course of the Independent Thought case to extend its remit to look at all forms of marital rape and not only that restricted to women below 18 years.

When the Supreme Court was reading down the exception to Section 375, shouldn't it have afforded the same protection to adult women as well?

The court made the conscious decision to restrict itself to the question of minors. The case was framed as a question of parity between the IPC on the one hand and the **Protection of Children from Sexual Offences (POCSO) Act, 2012**, on the other. I am sure a lot of constitutional commentators will talk about the merits of judicial restraint, and there is an argument to be made for that.

The issue is sensitive and can be controversial because a lot of people, including educated, seemingly liberal people, still believe that criminalizing marital rape will somehow threaten the 'institution of marriage' and will become some sort of a witch-hunt against husbands. That morality also captured the common law of coverture, under which women had no rights after marriage, their rights were to be exercised by their husbands, so they were completely reduced to the status of chattel, of property.

Judgments around the world, the European Court of Human Rights, have stressed on the offence and violence of rape, rather than the relationship between the perpetrator and the victim. To what extent are these developments relevant to India?

They are extremely relevant in terms of how our own jurisprudence could evolve in the coming years. We have seen how LGBTQ jurisprudence over the last 15 years in other countries has impacted to some extent how India's own jurisprudence from **Navtej Johar** has changed with regard to LGBTQ rights. Ultimately, the recognition of the perversity of the marital rape exception must come from within. For that we only need to look towards **Article 14**. The most compelling argument in support of the marital rape exception as it is prevalent in our statute today is that the institution of marriage is sacrosanct and that it should not be disturbed. The Constitution is unequivocal in the significance given to the individual. A person **deserves equality, equal protection and autonomy**. Therefore, the exception to marital rape in itself is unconstitutional and violate of **Article 14**. Further, marital rape is an affront to the **dignity of the individual**, which is protected **under Article 21**. Just because the nature of the relationship between the victim and the offender is one of marriage, it does not absolve a person of the crime. The argument that is built around the institution of marriage and its sanctity needs to be broken, which is what has happened in other jurisdictions around us. Once we realise that, our society will have no choice but to remove the marital rape exception.

We can also learn from the experiences of countries which have **criminalised marital rape**. It did not lead to a witch-hunt against husbands and definitely not to the destruction of marriage. There are socio-economic differences between India and some of the countries that have criminalised marital rape. I was reading that the government has used that as well as a **rationale against criminalising marital rape**, saying that the poverty, illiteracy and diversity in this country make the issue complex. But we need to question to what extent these factors map on to criminalising marital rape, and to what extent we can let them hamstring us.

What are the hurdles in reporting and prosecuting a crime like marital rape?

Most acts of sexual violence **are away from eyewitnesses**, and to lead evidence is a challenge in itself. I don't see why marital rape should be more difficult to report or prove in court than any other sexual offence. The POCSO Act has been an important step in ensuring that there is justice for child sexual abuse victims. Now we know that most offenders of child sexual abuses are within the family, but we don't give them immunity, right? We don't say there's an institution of family, so let's protect offenders who are within the same family. We need to show that it is as absurd to ask for protection of a husband from marital rape as it is to ask for protection of a family member from child sexual abuse. The marital space does create issues in reporting and prosecuting crime - not because of the nature of the offence or what is being criminalised but because of **the way that the functionaries in the criminal justice system think of these things**. The police, judges, prosecutors and anyone with whom the complainant will have to interact - it is they who are likely to create, either unwittingly or intentionally, barriers in reporting and prosecution because in their minds, consent being presumed within a marriage may persevere, even if the law happens to have changed.

Change in Social Structure Mindset, Need of Hour

Societal change is very important. It is not **only patriarchy or misogyny that needs to change**, we need to challenge notions about the sanctity of marriage. We need to check ourselves every time we indulge in blaming the victim. We also need to challenge our conservative mindsets when it comes to discussing sexual offences or offences that take place within the family.

There have existed certain power structures in our society, typically based on caste and gender. When these power structures are challenged by laws, the rhetoric of misuse comes in. That is the strongest kind of weapon operationalized against the implementation of such laws. It's important to counter such narratives as well as to establish that misuse is extremely unlikely.

14 THE NATIONAL SECURITY DISCOURSE IS CHANGING

The global security landscape is undergoing a churn, creating complexities and new realities unlike any time in the recent past. From a **rising China** to the pressures of climate change; from the challenges of **counter terrorism** to a seemingly never-ending COVID-19 pandemic (the four Cs), the old order is collapsing much faster than the ability of nations to create the foundations of a new one. National security debates and discourse are, quietly but surely, undergoing an almost revolutionary transformation. While the academic world has long talked about the need for a 'holistic' conception of national security, much of that debate was considered far too esoteric by practitioners. Today, it is the policymakers and practitioners themselves that are leading the emerging consensus on the need to fundamentally reassess our assumptions about national security thinking.

Change in the U.S.

The U.S. policymakers have started changing their cognitive lens when it comes to National Security Policy Making. A process that was started by former U.S. President Donald Trump has been taken forward with gusto by the Biden Administration. Asserting that **"foreign policy is domestic policy and domestic policy is foreign policy,"** U.S. President Joe Biden's **National Security Adviser Jake Sullivan** has suggested that his team's task is to re-imagine American "national security for the unprecedented combination of crises we face at home and abroad: the pandemic, the economic crisis, the climate crisis, technological disruption, threats to democracy, racial injustice, and inequality in all forms".

There is a growing bipartisan acknowledgement in the U.S. today that if the requirements of American national security during the Cold War could be largely met by its fleets of bombers, nuclear missiles, aircraft carriers and overseas bases, today's strategic environment requires a different response: one that shores up

domestic industrial base, helps in maintaining pre-eminence in critical technologies, makes supply chains for critical goods more resilient, **Protects Critical Infrastructure from Cyber Attacks**, and responds with a sense of urgency to climate change.

Not a novel idea

The idea that foreign and domestic policies are tightly intertwined is not a novel one. Mr. Sullivan is working towards integrating the National Security Council with the other components of the White House such as the **National Economic Council, with the Domestic Policy Council, with the Office of Science and Technology Policy**. This will inevitably present its own sets of challenges but there is no shying away from this new reality.

The Indian Situation

In India too, we have seen a greater recognition of the challenges emanating on national security from domestic vulnerabilities. India has **been dependent on Chinese manufacturing** for critical supplies. At a time when Indian armed forces were facing the People's Liberation Army across the Line of Actual Control, this exposed India to a new realisation that dependence on overseas supply chains is a national security challenge of the highest order, one that cannot be overlooked any more. India has since moved towards shoring up domestic capacities in critical areas and also started looking at free trade agreements through a new lens.

The Indian Army chief, General M.M. Naravane, in his remarks, has also made it apparent that views of the military leadership in this country are also evolving. He has argued that **"National Security Comprises Not Only Warfare And Defence But Also Financial Security, Health Security, Food Security, Energy Security And Environment Security apart from Information Security"** and suggested that instead of viewing national security "primarily from the perspective of an armed conflict, there is a need to take a whole-of-government approach towards security".

Highlight the Synergies

The Army chief has rightfully pointed out a range of tangible and intangible ways in which investment in the armed forces contributes to the national economy such as

1. Indigenization of defence procurement.
2. Providing an impetus to indigenous industries.
3. Aid to civil authorities or Humanitarian Assistance and Disaster Relief (HADR) operations protecting infrastructure.
4. Demand for hi-tech military products by the armed forces spurring entire industries.
5. Transportation and logistics capacities of the armed forces acting as force enablers for the Government in times of emergencies.

15 INFLUX OF MYANMAR NATIONALS IN MIZORAM VILLAGES

In a fresh influx from trouble-torn **Myanmar**, more than 1,800 people have reportedly crossed over to **Mizoram**. The Minister also clarified that he was yet to access documents pertaining to the matter. Myanmar nationals have been fleeing the country since February 2021 following **a military coup that left its democratically elected government in exile** and sparked protests and subsequent crackdowns. Mr. Lalchamliana stated that the Myanmar people who have entered Mizoram are mostly from the neighbouring country's **Chin state**.

"I have learned that around 1,850 people from Myanmar entered the border **districts of Champhai, Hnahthial and Lawngtlai in Mizoram** in the past few days. He further said that the Centre has not responded to the State government's letters seeking asylum for the Myanmar nationals in the country.

Six Mizoram districts - **Champhai, Siaha, Lawngtlai, Serchhip, Hnahthial and Saitual** - share a **510-km-long border with Myanmar's Chin state. The Chin community and Mizos share the same ancestry.**

Official sources said villagers residing along the India-Myanmar border have raised funds and set up relief camps for the refugees who have made their way to the State. The residents have also provided them food and other aid, they said.

Altogether 417 people, including children and elderly, entered the village in the past four days after **Chinland Defence Force (CDF)** apparently attacked and seized a military camp at Myanmar's Lungler village. According to Lalremkunga, Thingsai currently houses over 700 Myanmar nationals, 200 of them camping near **Tiau river along the India-Myanmar border.**

16 U.S. - U.K. AND AUSTRALIA -SECURITY PARTNERSHIP INDO-PACIFIC

A week before a meeting of Quad leaders in Washington DC, the Biden administration, announced a **new trilateral security partnership** for the Indo-Pacific, between **Australia, the U.K. and the U.S. (AUKUS)**. As part of this, Australia will acquire nuclear-powered submarines with help from the U.K. and the U.S.

AUKUS is a trilateral security pact between **Australia, the United Kingdom and the United States, for the Indo-Pacific region.** Under the pact, the US and the UK **will help Australia to acquire nuclear-powered submarines.** The pact also includes cooperation on **cyber capabilities, artificial intelligence, quantum technologies and additional undersea capabilities".** Under the pact, Australia will acquire new long-range strike capabilities for its air force, navy and army. The pact will focus on military capability, **separating it from the Five Eyes intelligence-sharing alliance** that also includes New Zealand and Canada.

What is 'Five Eyes', the intelligence alliance US wants South Korea, India, Japan to be part of?

The Five Eyes is an intelligence-sharing alliance consisting of the **US, UK, Australia, Canada & New Zealand.** The origins of the Five Eyes can be traced back to WWII.

'Five Eyes'

The Five Eyes is an intelligence alliance consisting of the US, UK, Australia, Canada and New Zealand. The origins of the Five Eyes can be traced back to the informal meetings between the US and UK code-breakers during the Second World War.

In 1941, **British and American intelligence members** began engaging in secret meetings before signing the **Atlantic Charter** that August, which listed global objectives for the two countries beyond the conclusion of the war. According to the UK's Government Communications Headquarters (GCHQ), this Charter paved the way for the **Britain-USA agreement**, and later the **UKUSA agreement**, which was signed in 1946.

Declassified **UKUSA intelligence documents** confirm that the agreement was expanded to include **Canada in 1948, and Australia and New Zealand in 1956**, thereby creating the Five Eyes alliance, partly due to past shared Commonwealth heritage.

Five Eyes & Cold War

The alliance was created during the Cold War that was fought between the United States and the Soviet Union, as well as their respective allies.

The Five Eyes countries also frequently shared intelligence with other allied nations in Europe and Asia, also known as “third parties”, during the Cold War. For instance, Japan shared military signals with the United States from the 1969 Sino-Soviet conflict as well as the 1979 Soviet-led invasion of Afghanistan.

In 2019, a US Congressional Committee led by Representative Adam Schiff pushed for the integration of India, Japan and South Korea at par with ‘Five Eyes’ for intelligence sharing so as to maintain peace in the Indo-Pacific region. In 2020, India and Japan had joined the Five Eyes nations in a joint appeal to tech companies to permit “backdoor access” to encrypted applications on smartphones.

AUKUS & Its Significance

The trilateral grouping was formally announced by Australian Prime Minister Scott Morrison who joined U.S. President Joe Biden at the White House via video-link. British Prime Minister Boris Johnson also participated in the launch via video link.

“The future of the Indo-Pacific will impact all our futures,” Mr. Morrison said, adding that AUKUS will enhance Australia’s contribution to its other partnerships, including the Quad. There was no divide separating the interests of America’s Atlantic and Pacific partners, he said, adding that the U.S. would work with other partners - such as the Quad and ASEAN - in the region. Mr. Biden also singled out France for its growing presence in the region and role in strengthening security there.

The Nuclear Powered Submarine

The nuclear powered submarines will be built in Adelaide, Mr. Morrison said, in close cooperation with the U.K. and the U.S.. Officials said the 18-month project to deliver the first fleet, would help Australia acquire submarines that are quieter than their conventional counterparts but also more capable of being deployed for longer periods and needing to surface less frequently. “Only a handful of countries, possess nuclear powered submarines, and it is a momentous decision for any nation to acquire this formidable capability,” Mr. Johnson said, as he highlighted the employment opportunities the partnership would create for Britons.

“Alongside India’s stated intent to acquire more nuclear-powered submarines, it will amount to a step-change increase in the Quad’s undersea and anti-submarine warfare capabilities.

AUKUS will also involve a new architecture of meetings and engagements between the three countries, as well as cooperation across emerging technologies.

1. Applied AI.
2. Quantum Technologies.
3. Undersea Capabilities.

Tensions have been high between Australia and an increasingly assertive China, Australia’s largest trade partner. Australia banned Chinese telecom giant Huawei in 2018 and Mr. Morrison called for an investigation into the origins of COVID-19 2020. China retaliated by imposing tariffs on or capping Australian exports.

Peace and Stability

The partnership was also a “down-payment” the U.K. was making on its decision to engage more deeply with the Indo-Pacific, as per one official, who said the partnership was a “fundamental decision...that binds, decisively, Australia to the United States and Great Britain for generations.”

17 NCRB REPORT: A STATUS CHECK ON CRIMES IN THE COUNTRY

The Coronavirus pandemic and subsequent lockdown resulted in a drop in traditional crimes like theft, robbery, and assault on women and children in 2020, but there was a drastic jump in disobedience to government orders, primarily arising due to violations of COVID-19 norms.

According to the latest report of the National Crime Records Bureau (NCRB) on 'Crime in India - 2020', a total of 66,01,285 cognizable crimes comprising 42,54,356 India



The **National Crime Records Bureau, (NCRB)**, is an Indian government agency responsible for collecting and analyzing crime data as defined by the **Indian Penal Code (IPC)** and **Special and Local Laws (SLL)**. NCRB is **headquartered in New Delhi** and is **part of the Ministry of Home Affairs (MHA)**, Government of India. The current Director of National Crime Record Bureau is **Ramphal Pawar (IPS)**.

NCRB was **set-up in 1986** to function as a repository of information on crime and criminals so as to assist the investigators in linking crime to the perpetrators. It was set up **based on the recommendation of the Task force, 1985 and**

National Police Commission, 1977 by merging

1. The Directorate of Coordination and Police Computer (DCPC).
2. Inter State Criminals Data Branch of CBI.
3. Central Finger Print Bureau of CBI.

Earlier Statistical Branch of Bureau of Police Research and Development (BPR&D) was also merged with NCRB, but was later de-merged.

To Empower Indian Police with Information Technology and criminal Intelligence to enable them to uphold law and protect people. To provide leadership and excellence in crime analysis particularly for serious and organized crime.

Objectives

1. Create and maintain **secure sharable National Databases** on crimes and criminals for law enforcement agencies and promote their use for **public service delivery**.
2. Collect and process crime statistics at the national level and clearing house of information on crime and criminals both at National and International levels.
3. Lead and coordinate development of IT applications and create an enabling IT environment for Police organizations.
4. National repository of fingerprints of all criminals.

5. To evaluate, modernize and promote automation in State Crime Records Bureaux and State Finger Print Bureaux .
6. Training and capacity building in Police Forces in Information Technology and Finger Print Science.

The main objective of the Crime Records Branch is to collect, collate and disseminate information on Crime, Criminals, Persons and Property for matching purposes. The branch utilizes following software systems:

- **Vahan Samanvay:** An online Motor Vehicle Coordination System for coordination of stolen and recovered motor vehicles across the country. Police, RTOs, and Insurance sector are main stakeholders. The general public is also benefited with this system.
- **Talash Information System:** This system is used to maintain and coordinate information on Missing, Traced, Unidentified persons and unidentified dead bodies.
- **Fake Indian Currency Notes System (FICN):-** It is an online system for compilation of fake Indian currency data. Police, Banks, Investigating agencies, other intelligence agencies and Ministries are stakeholders of this system.
- **Fire Arms Coordination System:** This system is used for coordination of missing/stolen and recovered firearms.
- **Colour Portrait Building System:** This system is used to create portraits of suspects based on the description given by victims and eyewitnesses.
- Since year 2011, 600 persons (live & dead) have been united with their families by matching photographs and other physical features.
- Since launch of online application 'Vahan Samanvay' in 2014 till date 14,14,055 data has been captured and 30,577 Stolen vehicles have been matched from different states.

CENTRAL FINGER PRINT BUREAU

The **World's First Finger Print Bureau** was set up in Intelligence Bureau at Delhi. It was relocated to Calcutta in 1897. A CFPB was established at Shimla Calcutta (now Kolkata) in 1956. The administrative in 1905, however it was closed in 1922 as a control of CFPB shifted to Central Bureau of result of retrenchment proposals of the Inchcape Investigation (CBI) in 1973, and since July, 1986, Committee. The Present CFPB came into existence this has been under the administrative control of in 1955 under the administrative control of NCRB.

In Penal Code (IPC) crimes and 23,46,929 Special and Local Laws (SLL) crimes were registered in 2020.

India reported an average **80 murders daily in 2020**, totaling 29,193 fatalities over the year, with **Uttar Pradesh topping the chart among states**. This was an increase of one per cent over the total 28,915 murders in 2019, with a daily average of 79 killings during the year, the data showed. Delhi accounted for nearly 40 per cent of all rape cases and almost 25 per cent murder cases among 19 metropolitan cities in India in 2020.

18 CYBER TERRORISM CASES- IMPORTANCE OF NIA

The **National Investigation Agency (NIA)**, which was given the mandate to take up cases of **cyber terrorism in 2019**, should be provided with additional infrastructure and domain experts to probe such offences more efficiently, according to experts.

Concept of Team Investigation

Navneet Rajan Wasan, former **Bureau of Police Research and Development** Director-General who also headed the NIA, stressed on the concept of team investigation, which is prevalent in many countries. Referring to the ransom ware attack on a pipeline network in the U.S. in May, he said such crimes were investigated there by teams comprising police officers and experts in the respective fields.

The NIA was empowered to probe cases of cyber terrorism under the **National Investigation Agency (Amendment) Act**, which was passed by Parliament in July 2019. The law included **Section 66-F of the Information Technology Act in the schedule of the NIA Act**, which pertains to cyber terrorism and prescribes punishment extending to life imprisonment.

19 NRC IS FINAL- RULES ASSAM FOREIGNERS' TRIBUNAL

The **Registrar General of India** not yet issued a notification on Assam's **National Register of Citizens (NRC)** to make it a legal document, a **Foreigners' Tribunal** has gone ahead and recorded it as the '**final NRC**' while declaring a man to be Indian.

Registrar General and Census Commissioner of India, founded in 1961 by Government of India, Ministry of Home Affairs, for arranging, conducting and analysing the results of the demographic surveys of India including Census of India and Linguistic Survey of India. The position of Registrar is usually held by a civil servant holding the rank of Joint Secretary.

State govt. caution

The FT-II's 'order cum opinion' comes just days after Assam's Political (B) Department had on September 4 asked the FTs not to pass "consequential orders/directions" and stick to giving an "opinion" as mandated by the **Foreigners (Tribunals) Order, 1964**. The letter to the FTs followed an assessment by the State's Judicial Department of the "opinions" given by the members in the case of people suspected to be foreigners or doubtful voters.

Mr. Singha produced before the FT-II several documents to prove his Indian citizenship. She referred to the 'White Paper on Foreigners' Issue' published by Assam's Home and Political Department on October 20, 2012, which says that **anyone born between January 26, 1950, and July 1, 1987, can be considered an Indian citizen by birth irrespective of the nationality of his or her parents.**

The member also observed that Mr. Singha's name figured in the NRC that was supervised by the Supreme Court on the basis of **the Citizenship Act of 1955 and The Citizenship (Registration of Citizens and Issue of National Identity Cards) Rules, 2003.**

20 INDIA'S TO RESUME COVID-19 VACCINE SHIPMENTS SIGNIFICANT: WHO CHIEF

COVAX is a **worldwide initiative aimed at equitable access to COVID-19** vaccines directed by Gavi, the Vaccine Alliance, the Coalition for Epidemic Preparedness Innovations, and the WHO.

World Health Organization chief **Tedros Adhanom Ghebreyesus** has hailed India's decision to resume COVID-19 vaccine exports as an 'important development' in support of the goal to reach **40 per cent vaccination in all countries by end of 2021.**

India said that it will resume export of surplus COVID-19 vaccines in the fourth quarter of 2021 under the '**Vaccine Maitri**' programme and to meet its commitment to the COVAX global pool.

India stopped the export of COVID-19 vaccines after the second wave of the pandemic hit the country in April 2021

Asserting that vaccination of its own citizens remains the government's topmost priority, Mr. Mandaviya said, "India will be resuming the export of COVID-19 vaccines under Vaccine Maitri in order to fulfil the commitment of India towards COVAX in line with our motto of '**Vasudhaiva Kutumbakam**'.

What is COVAX?

COVAX is a **worldwide initiative** aimed at equitable access to COVID-19 vaccines directed by Gavi, the Vaccine Alliance, the Coalition for Epidemic Preparedness Innovations, and the WHO.

Vaccine Maitri is a **humanitarian initiative** undertaken by the Indian government to provide COVID-19 vaccines to countries around the world. The government started providing vaccines from 20 January 2021. As of 21 February 2022, India had delivered around 16.29 crore (162.9 million) doses of vaccines to 96 countries. Of these, 1.43 crore (14.3 million) doses were gifted to 48 countries by the Government of India. The remaining 10.71 crore were supplied by the vaccine producers under its commercial and 4.15 crore were supplied by COVAX obligations. In late March 2021, the Government of India temporarily froze exports of the Covishield, citing India's own COVID crisis and the domestic need for these vaccines. The Health Minister of India, Mr. Mansukh Mandaviya announced in September that India will resume the export of vaccines from October to the rest of the world. 200,000 doses of COVID-19 vaccines were gifted by India to the UN peacekeepers on 27 March to be distributed to all peacekeeping missions

The surplus supply of vaccines will be used to fulfil India's commitment towards the world for the collective fight against COVID-19, the Minister said. The Minister said the government will receive over 30 crore doses of COVID-19 vaccines in October and over 100 crore doses in the coming quarter from October-December. The cumulative doses administered so far across the country has crossed 81.7 crore.

21 CHINA COMPLETES KEY SECTION OF BEIJING-LHASA ROAD LINK

Part of its infra push in Tibet, the Lhasa-Nagqu stretch is termed world's highest expressway.

Continuing its infrastructure build up in Tibet, China has completed a key section of the **Beijing-Lhasa expressway, a 295 km stretch from Lhasa to Nagqu**. This section is located at an average altitude of 4,500 metres above sea level which Chinese state media have termed **the world's highest expressway**.

In a separate development opposite the Central sector in Uttarakhand, the People's Liberation Army (PLA) has set up surveillance equipment and cameras opposite the **Kio Dhura Pass**. "Yellow balloon-shaped surveillance equipment are co-located with a wind mill and solar panel at the site," according to inputs.

Joins PLA commands

The Lhasa-Nagqu section is part of the **G6 Beijing-Lhasa expressway** and is the first expressway linking Lhasa, the **capital of the Tibet Autonomous Region to north Tibet**. It also connects the PLA's **Central Theatre Command** with the **Western Theatre Command** which is responsible for the border with India, an official source said.

"An important stretch of the expressway between Nagqu to Yangbajain of Lhasa-Nagqu section was put into operational trial on August 21. On completion of Lhasa-Nagqu section, the driving time between Lhasa and Nagqu has reduced from six hours to three hours," an official source said.

The completed expressway will pass through seven major cities of China including Beijing, Hebei, inner Mangolia, Ningxia, Gansu, Qinghai and Lhasa with an approximate length of 3,710 km.

Ladakh Standoff

China has been on a **massive infrastructure build up** in Tibet which continued all through the standoff along the Line of Actual Control (LAC) in **Eastern Ladakh with India** since May 2020. The infrastructure includes dual use airfields, roads, accommodation for troops, ammunition dumps among others.

In June 2020, China had launched a **high speed bullet train connecting Lhasa with Nyingchi**, a strategically located Tibetan town located close to Arunachal Pradesh.

Firing Exercise

The Artillery regiment of **8 Mountain Infantry Division** conducted live firing exercise employing PCL-181 155mm vehicle mounted howitzer guns in the **High Altitude Plateau**. Similarly, the 31 Regiment of 11 Mountain Division of PLA conducted live firing and assessment exercise employing PCD-001 vehicle mounted, rapid fire mortars in the high altitude area, the official added. The Indian Army too had conducted an exercise with armoured elements in the **Super High Altitude Area of Ladakh** at altitude of over 15,000 feet under the aegis of the Leh based 14 Corps. This was conducted by the **Snow Leopard armoured Brigade located at Nyoma**, very close to the **Chushul range on the South Bank of Pangong Tso**.

Another round of disengagement was undertaken in Gogra area of Eastern Ladakh in August following an agreement during the 12th round of Corps Commander talks as part of efforts for overall disengagement and de-escalation in Eastern Ladakh to end the standoff.

22

WORDS AND DEEDS: ON PM MODI'S SPEECH AT UNGA

For the third consecutive year in a row, and his **fourth such speech** since he was elected in 2014, **Prime Minister Narendra Modi addressed the UN General Assembly**, outlining his outlook on India's place in the world. Referring to India's large population, he said that the world grows when India grows, and transforms when India reforms, pointing to examples of the **country's progress and impact**:

1. In the area of vaccines and pharmaceuticals.
2. Particularly to counter COVID.
3. Green Technology and the promise of 450 GW of renewable energy by 2030.
4. Poverty Alleviation.

He also enumerated how many Indians had been provided water connections, banking access, insurance coverage, health services and homes, although his claim that these "all-inclusive" development goals had been achieved only in the "last seven years", struck a politically partisan note that was out of place.

1 FAA BANS VIRGIN GALACTIC LAUNCHES

The **Federal Aviation Administration** said that **Virgin Galactic** cannot launch anyone into space again until an investigation is complete into a mishap that occurred during **July's flight with founder Richard Branson**.

The ban came as Virgin Galactic announced plans to launch **three Italian researchers to the edge of space**.

The FAA said the rocket ship carrying Branson and five Virgin Galactic employees veered off course during its descent back to its runway in the New Mexico desert on July 11, 2021. The deviation put the ship outside the air traffic control clearance area.

The FAA is overseeing the probe; it's **responsible for protecting the public during commercial launches and reentries**. Crew safety, on the other hand, is outside its jurisdiction. Virgin Galactic insisted that Branson and everyone else on board were never in any added danger.

"Virgin Galactic may not return the SpaceShipTwo vehicle to flight until the FAA approves the final mishap investigation report or determines the issues related to the mishap do not affect public safety," the FAA said in a statement.

Virgin Galactic acknowledged the space plane dropped below the protected airspace for one minute and 41 seconds. The spacecraft's free-flying portion of the up-and-down flight lasted about 15 minutes and reached an altitude of 53.5 miles (86 kilometers).

Virgin Galactic said **high-altitude wind caused the change in flight path** and insisted the two pilots "responded appropriately." In a statement, the company said the flight was "a safe and successful test flight that adhered to our flight procedures and training protocols."

In another statement, Virgin Galactic added that "at no time did the ship travel above any population centres or cause a hazard to the public." Virgin Galactic operates out of Spaceport America in the **southern New Mexico desert**.

WINDS

Gustiness

A gust is a **rapid and irregular fluctuation of varying intensity in the upward and downward movement of air currents**. It may be associated with a rapid change in wind direction. Gusts are **caused by mechanical turbulence** that results from friction between the air and the ground and by the unequal heating of the earth's surface, particularly on hot summer afternoons.

Squalls

A squall is a sudden increase in the **strength of the wind of longer duration than a gust** and may be caused by the passage of a fast moving cold front or thunderstorm. Like a gust, it may be accompanied by a **rapid change of wind direction**.

Diurnal Variations

Diurnal (daily) variation of wind is caused by strong surface heating during the day, which causes turbulence in the lower levels. The result of this turbulence is that the direction and **speed of the wind at the higher levels (e.g., 3000 feet)** tends to be transferred to the surface. Since the wind direction at the higher level is parallel to the isobars and its speed is greater than the surface wind, this transfer causes the surface wind to veer and increase in speed.

At night, there is no surface heating and therefore less turbulence and the surface wind tends to resume its normal direction and speed. It backs and decreases. See **VEERING AND BACKING** section below for more info.

Eddies - Mechanical Turbulence

Friction between the moving air mass and surface features of the earth (**Hills, Mountains, Valleys, Trees, Buildings, etc.**) is responsible for the swirling vortices of air **commonly called eddies**. They vary considerably in size and intensity depending on the size and roughness of the surface obstruction, the speed of the wind and the degree of stability of the air. They can spin in either a horizontal or vertical plane. Unstable air and strong winds produce more vigorous eddies. In stable air, eddies tend to quickly dissipate. Eddies produced in mountainous areas are especially powerful.

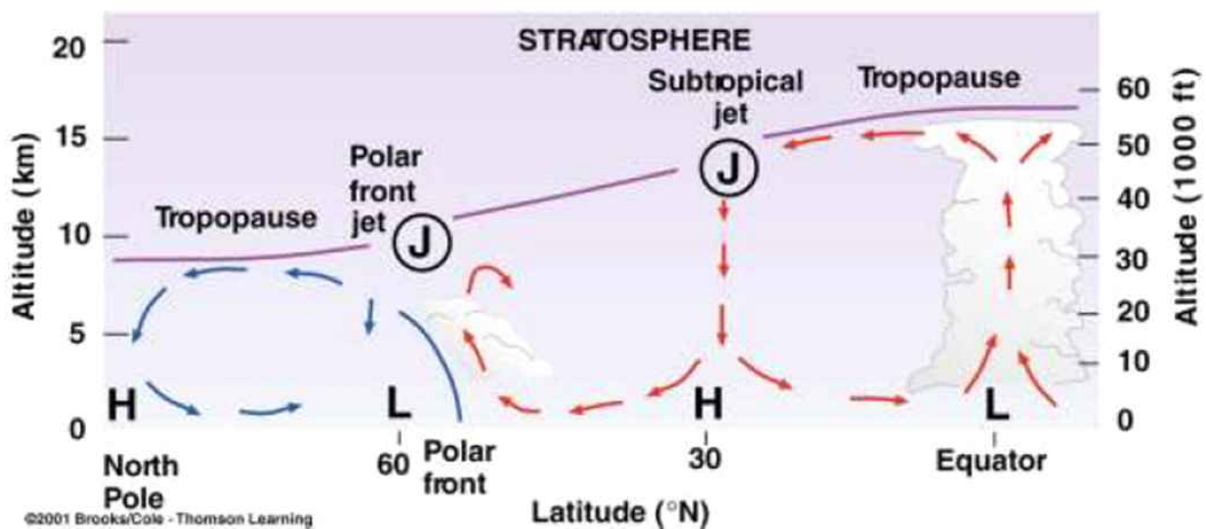
In Cruising Flight

In cruising flight, wind shear will likely be encountered in the transition zone between the pressure gradient wind and the distorted local winds at the lower levels. It will also be encountered when climbing or descending through a temperature inversion and when passing through a frontal surface.

Wind shear is also **associated with the jet stream**. Airplanes encountering wind shear may experience a succession of **updrafts and downdrafts, reductions or gains in headwind, or windshifts** that disrupt the established flight path. It is not usually a major problem because altitude and airspeed margins will be adequate to counteract the shear's adverse effects. On occasion, however, the wind shear may be severe enough to cause an abrupt increase in load factor, which might stall the airplane or inflict structural damage.

The Jet Stream

Narrow bands of exceedingly high speed winds are known to exist in the higher levels of the atmosphere at **altitudes ranging from 20,000 to 40,000 feet or more**. They are known as jet streams. As many as **three major jet streams** may traverse the **North American continent at any given time**. One lies across Northern Canada and one across the U.S. A third jet stream may be as far south as the northern tropics but it is somewhat rare. A jet stream in the mid latitudes is generally the strongest.



Clear Air Turbulence:

The most probable place to expect Clear Air Turbulence (CAT) is just above the central core of the jet stream near the polar tropopause and just below the core. Clear air turbulence does not occur in the core. CAT is encountered more frequently in winter when the jet stream winds are strongest.

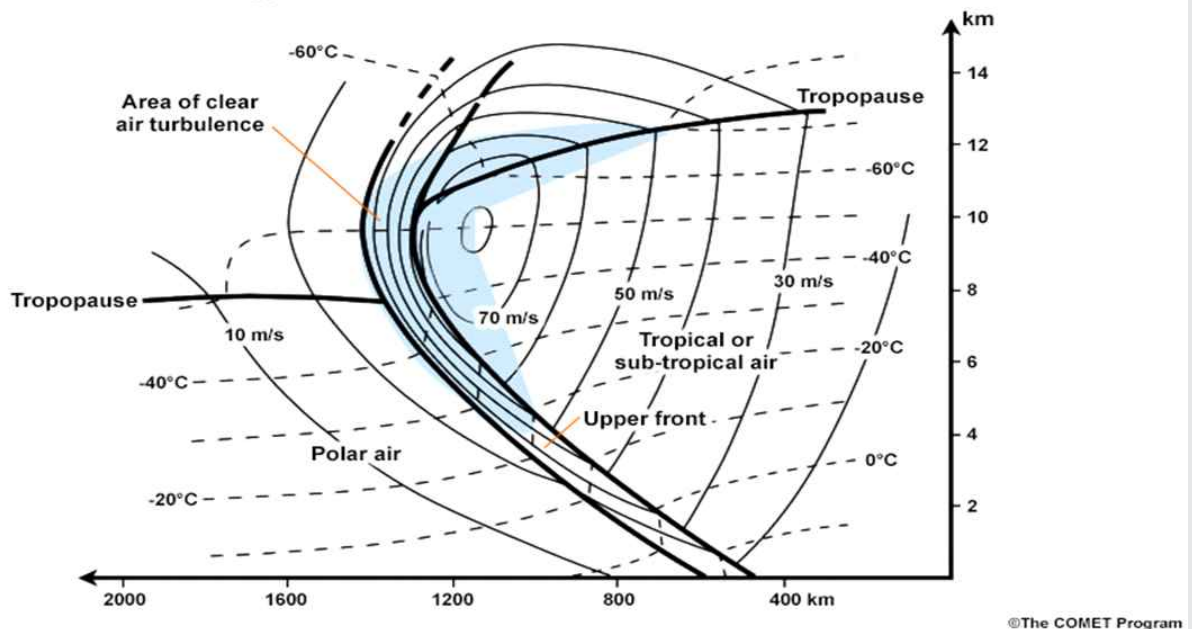
Nevertheless, CAT is not always present in the jet stream and, because it is random and transient in nature, it is almost impossible to forecast.

Mountain waves create severe CAT that may extend from the mountain crests to as high as **5000 feet above the tropopause**. Since severe CAT does pose a hazard to airplanes, pilots should try to

avoid or minimize encounters with it. These rules of thumb may help avoid jet streams with strong winds (**150 knots**) at the core. Strong wind shears are likely above and below the core. CAT within the jet stream is more intense above and to the lee of

mountain ranges. If the **20-knot isotachs (lines joining areas of equal wind speeds)** are closer than **60 nautical miles** on the charts showing the locations of the jet stream, wind shear and CAT are possible.

Vertical Cross-Section of an Upper-Level Front With Moderate or Severe Turbulence Probable in the Shaded Areas



Branson ended up beating fellow billionaire Jeff Bezos - founder of Amazon as well as rocket company Blue Origin - into space by nine days. **Bezos launched July 20, 2021 with three others from West Texas.**

Virgin Galactic and **Blue Origin** are vying to sell seats to tourists, scientists and anyone else looking to experience a **few minutes of weightlessness**. **Virgin Galactic's rocketship** is launched from an airplane, **While Blue Origin's Capsule** is hoisted by a **reusable New Shepard rocket**.

Virgin Galactic is aiming for late September or early October for its next flight, with two Italian Air Force officers, an engineer for the **National Research Council of Italy**, Virgin Galactic's chief astronaut instructor and the rocketship's two pilots. It will be the company's first launch where researchers accompany their own experiments. The company plans to start flying ticket holders next year. Blue Origin has yet to announce a date for its next passenger flight, other than to say it will be soon.

2 GOOGLE - PARTNER TO INDIA'S FINANCIAL ECOSYSTEM

Internet major Google said it firmly sees itself as a partner to the existing **financial ecosystem in India** and those instances of partnerships being described as Google Pay's offerings fuel misinterpretation. While the company did not elaborate of any specific instances, the latest assertion comes against the backdrop of reports that **suggested Google Pay has launched fixed deposit offerings in partnership with a bank.**

The company emphasised that in every geography where Google Pay is present, its stance is consistently one of partnering with the existing financial services and banking systems to help scale and enable frictionless delivery of financial products and services and contribute to the goal of financial inclusion.

In a blogpost, Google India said there have been a few instances where these offerings have been reported as 'Google Pay's offerings' which "fuels misinterpretation". According to Google, several of its offerings are built on top of **NPCI's pioneering UPI payment network and infrastructure**, "which has grown over 190X in the last 4 years, to processing over INR 6 trillion in value today".

Furthering that objective, in 2019, "we had announced **the launch of the Spot Platform on Google Pay**, a surface for merchants of all types - **offline or digital native, small or large, across use cases** - to find payment-ready users," it noted.

"Today we have close to **400 merchant spots on Google Pay**, and in this journey, we have seen that financial product offerings perform especially well, with offerings from spot experiences delivered by financial services players like **CashE, Groww, 5paisa, Zest Money etc.** seeing significant growth and engagement from users on Google Pay," the blogpost said.

Earlier this week, **Google Pay's partnership with Equitas SFB** was announced under which consumers can book **fixed deposits fully digitally**, without needing to open a savings account with the lender through its 'spot' integrated with the Google Pay platform.

3 SCIENTISTS -DRONE TECHNOLOGY FOR AGRICULTURE

Acharya N.G. Ranga Agriculture University Board Member Pachari Devullu and **Andhra Pradesh Rice Research Institute (APRRI-Maruteru)** Associate Director of Research Dr. G. Jogi Naidu inspected the viability of drone technology for adoption in agriculture.

The drone technology demonstration has been conducted by the Agriculture Research Station, Pedapuram, for the farmers cultivating maize and viability to adopt the technology to avoid scarcity of labour and minimise the input cost on various commercial crops.

MAIZE

Maize (**Zea mays L.**) is one of the most versatile emerging crop having wider adaptability under varied agro-climatic conditions. Globally, maize is known as **queen of cereals** because it has the **highest genetic yield potential** among the cereals. It is cultivated on nearly 150 m ha in about **160 countries having wider diversity of soil, climate, biodiversity** and management practices that contributes 36 % (782 m t) in the global grain production

In India, maize is the **third most important food crops after rice and wheat**. According to advance estimate it is cultivated in 8.7m ha (2010-11) mainly **during Kharif season** which covers 80% area. Maize in India, **contributes nearly 9 % in the national food basket** and more than Rs. 100 billion to the agricultural GDP at current prices apart from the generating employment to over 100 million man-days at the farm and downstream agricultural and industrial sectors.

In addition to staple food for human being and quality feed for animals, maize serves as a basic raw material as an ingredient to thousands of

industrial products that includes **Starch, Oil, Protein, Alcoholic Beverages, Food Sweeteners, Pharmaceutical, Cosmetic, Film, Textile, Gum, Package and Paper Industries etc.,**

Maize does well on a wide range of climatic conditions, and it is grown in the tropical as well as temperate regions, from **Sea-Levels up to Altitudes of 2500 m**. It is however **susceptible to frost** at all stages of its growth Maize can be grown successfully in variety of soils ranging from **loamy sand to clay loam**. However, soils with good organic matter content having **high water holding capacity** with neutral pH are considered good for higher productivity.

The **United States of America (USA)** is the **largest producer of maize** contributes nearly 35% of the total production in the world and maize is the driver of the US economy. The **USA has the highest productivity** (> 9.6 t ha⁻¹) which is double than the global average (4.92 t ha⁻¹). Whereas, the average productivity in India is 2.43 t ha⁻¹ **largest maize producing state in India is Andhra Pradesh.**

Addressing the farmers, Mr. Devullu has observed; “The viability of the drone technology has already been proved in the agriculture in Andhra Pradesh. Hopefully, the technology would likely to be adopted by more farmers in the coming years, given its capabilities and features”.

In the demonstration given by a progressive farmer, the pesticide has been sprayed **on the finger millet and maize fields**. One acre of field can be covered within 15 minutes to spray the pesticide and **the maximum charge is ₹350 per acre**. The drones are being used to spray the pesticides based on the coordinates of the field.

Led by RARS-Peddapuram Principal Scientist T. Anuradha, **the maize farmers have been told to explore the possibilities to use drone technology**.

The RARS-Peddapuram Scientists have distributed the kits to the maize farmers. The **Indian Council of Agriculture Research** has funded the kits under the Scheduled Castes Sub-Plan and each kit comprises of sprayers machine, tarpaulin, and other equipment worth ₹6,000.

THE INDIAN COUNCIL OF AGRICULTURE RESEARCH

The **Indian Council of Agricultural Research (ICAR)** is an autonomous organisation under the Department of Agricultural Research and Education, Ministry of Agriculture, Government of India. Formerly known as **Imperial Council of Agricultural Research**, it was established on 16 July, 1929 as a registered society under **the Societies Registration Act, 1860** in pursuance of the report of **the Royal Commission on Agriculture**. The ICAR has its headquarters at New Delhi.

Union Minister of Agriculture is the ex-officio President of the ICAR Society.

Secretary, Department of Agricultural Research & Education Ministry of Agriculture, Govt. of India & Director-General, ICAR - the Principal Executive Officer of the Council

Governing Body is the policy-making authority
Agricultural Scientists' Recruitment Board

Deputy Directors-General (8)

Additional Secretary (DARE) and Secretary (ICAR)

Additional Secretary and Financial Advisor

Assistant Directors-General (24)

National Director, National Agricultural Innovation Project

Directorate of Information and Publications of Agriculture

The **Council is the apex body for coordinating, guiding and managing research and education in agriculture including horticulture, fisheries and animal sciences in the entire country.**

With **97 ICAR institutes and 45 agricultural universities** spread across the country this is one of the largest national agricultural systems in the world.

The ICAR has played a pioneering role in ushering Green Revolution and subsequent developments in agriculture in India through its research and technology development that has **enabled the country to increase the production of foodgrains by 4 times, horticultural crops by 6 times, fish by 9 times (marine 5 times and inland 17 times), milk 6 times and eggs 27 times since 1950-51**, thus making a visible impact on the national food and nutritional security. It has played a major role in promoting excellence in higher education in agriculture. It is engaged in cutting edge areas of science and technology development and its scientists are internationally acknowledged in their fields.

The mandate of the Indian Council of Agricultural Research is:

To **plan, undertake, aid, promote** and coordinate education, research and its application in agriculture, agroforestry, animal husbandry, fisheries, home science and allied sciences.

To act as a **clearing house of research and general information** relating to agriculture, animal husbandry, home science and allied sciences, and fisheries through its publications and information system; and instituting and promoting transfer of technology programmes.

To provide, undertake and promote consultancy services in the fields of education, research, training and dissemination of information in agriculture, agroforestry, animal husbandry, fisheries, home science and allied sciences.

To look into the problem relating to broader areas of rural development concerning agriculture, including postharvest technology by developing co-operative programmes with other organizations such as the **Indian Council of Social Science Research, Council of Scientific and**

Industrial Research, Bhabha Atomic Research Centre and the universities.

To do other things considered necessary to attain the objectives of the Society.

“The research on the maize is in progress at the RARS-Peddapuram as part of the All India Coordinated Research Project on Maize”, added Ms. Anuradha. **East Godavari and West Godavari districts** are the prime maize producers in Andhra Pradesh.

4 SEMICONDUCTOR SHORTAGE TO HIT OUTPUT AT M&M

Mahindra & Mahindra said the output at its automotive division will be cut by up to 25% owing to ‘no-production’ days across plants due to semiconductor shortage. In a filing, M&M said its automotive division continued to face supply shortage of semiconductors, which further accentuated due to COVID lockdowns in some parts of the world.

SEMI CONDUCTOR

History of Semiconductors

The birth history of semiconductors can be traced back to the invention of the rectifier (**AC-DC converter**) in **1874**. Decades later, Bardeen and Brattain at Bell Laboratories in the US invented the point-contact transistor in 1947, and Shockley invented the junction transistor in 1948. This heralded the arrival of the transistor era. In 1946, the University of Pennsylvania in the US built a computer using the vacuum tubes. The computer was so large that its vacuum tubes occupied the entire building, and it consumed a huge amount of electricity and produced a lot of heat. Later, the innovative transistor calculator (computer) was developed, and since then computers have grown by leaps and bounds.

In 1956, the Nobel Prize in Physics was awarded jointly to Shockley, Bardeen and Brattain for their contribution to semiconductor research and the development of the transistor.

The semiconductor industry grew rapidly following the invention of the transistor. In 1957, it already exceeded the scale of 100 million dollars. In 1959, the **bipolar integrated circuit (ICs) was invented by**

Kilby of Texas Instruments and Noyce of Fairchild Semiconductor in the US. This invention had a major impact on the history of semiconductors, and it marked the dawn of the IC era. Being small in size and light in weight, the IC was widely used in a variety of electric appliances.

In 1967, Texas Instruments developed the electronic desktop calculator (the calculator) using IC. In Japan, electronic equipment manufacturers released calculators one after another, and fierce “calculator wars” continued until the end of the 1970s. IC integration advanced even further, and the large-scale integrated circuit (LSI) was developed. The technologies continue to advance. The VLSI (from 100 thousand to 10 million electronic components per chip) was developed in the 1980s, and the ULSI (more than 10 million electronic components per chip) was developed in the 1990s. In the 2000s, the system LSI (a multifunction LSI with multiple functions integrated in a single chip) was put into full-scale production. As IC progresses toward high performance and multiple functions, its field of application is expanding broadly. Semiconductors are now used in every corner of our society and support everyday life.

What are semiconductors?

Semiconductors possess specific electrical properties. **A substance that conducts electricity is called a conductor**, and a substance that does not conduct electricity is called an insulator. Semiconductors are substances with properties somewhere between them. ICs(integrated circuits)

and electronic discrete components such as diodes and transistors are made of semiconductors. Common elemental semiconductors are silicon and germanium. Silicon is well-known of these. **Silicon forms most of ICs**. Common semiconductor compounds are such as **Gallium Arsenide Or Indium Antimonide**.

“Consequently, the company will be observing ‘no production days’ of about 7 days in September,” the company said. The move is estimated to result in a “reduction in production volumes of the automotive division in September 2021, by 20-25%,” M&M added.

5 NASA'S NEWEST MARS ROVER SNAGS FIRST ROCK

NASA's newest Mars rover has successfully collected its **first rock sample** for return to Earth, after last month's attempt came up empty.

The Perseverance rover's chief engineer, Adam Steltzner, called it a perfect core sample.

PERSEVERANCE drilled into much softer rock, and the sample crumbled and didn't get inside **the titanium tube**. The rover drove a half-mile to a better sampling spot to try again. Team members analysed data and pictures before declaring success.

Perseverance arrived at Mars' Jezero Crater - believed to be the home of a lush lake-bed and river delta billions of years ago - in search of rocks that might hold evidence of ancient life. NASA plans to launch more spacecraft to retrieve the samples collected by Perseverance; engineers are hoping to return as many as three dozen samples in about a decade.

6 BREAKTHROUGH CHALLENGE: ON VACCINES & VIRUS VARIANTS

With **over 66 crore vaccine doses administered** since the vaccination drive commenced in January, India has now **inoculated at least half its adult population with at least one dose**, and 16% with two. There is a small, discernible rise in the number of new infections. Kerala, which contributes the bulk of infections, also has among the highest proportions of the population who are double vaccinated. This apparent paradox underlies concerns about the rise in **'breakthrough infections'**, or confirmed infections in those who took the second dose at least two weeks earlier.

A recent study by CSIR scientists found that nearly **a quarter of 600 fully vaccinated care workers were reinfected**. Earlier studies from the CMC Vellore, and **PGIMER, Chandigarh**, too have reported between 1%-10% of fully vaccinated health-care workers as having been infected. **Israel and the U.S. in spite of high vaccination coverage**, continue to report new cases; though here too, the infection rate is much higher in the unvaccinated. The prime suspects, internationally as well as in India, are the Delta variants and related sub-lineages that are believed to form the bulk of coronavirus infections. The **Indian SARS-CoV-2 Genomics Consortium (INSACOG)** that tracks mutations in coronavirus strains has said that the breakthrough infections reported so far are **within 'expected' numbers**. That is, vaccines in large, controlled clinical trials had demonstrated 70%-90% efficacy but lost considerable ability to reduce symptomatic infections when confronted with the Delta variants, and so a certain fraction of those fully vaccinated would continue to be vulnerable.

INSACOG (Indian SARS-CoV-2 Consortium on Genomics)

INSACOG Background & Objective

INSACOG (Indian SARS-CoV-2 Consortium on Genomics or Indian SARS-CoV-2 Genetics Consortium) is the forum set up under the Ministry of Health and Family Welfare by the Government of India on 30 December 2020, to study and monitor genome sequencing and virus variation of circulating strains of COVID-19 in India. Initially it **was tasked to study the virus variant Lineage B.1.1.7** earlier found in United Kingdom in December 2020.

INSACOG works as a **consortium of 38 national laboratories for genome sequencing** located in different parts of India. All these 10 laboratories

are required to share 5% of positive samples to INSACOG for further research and studies. A **National Centre for Disease Control (NCDC)** nodal unit maintains a database of all samples of the new variants.

Two national genomic sequencing database centers are appointed

1. National Institute of Biomedical Genomics
2. CSIR Institute of Genomics and Integrative Biology.

In its early research INSACOG identified virus variant Lineage B.1.617 referred to as a double mutation variant.

While other vaccines are in the pipeline, all of them are designed on the Wuhan-virus platform and although companies claim that the strength of m-RNA and DNA-based vaccine platforms lies in the ability to quickly tweak them to accommodate new variants, there are no reports yet, anywhere in the world, of vaccine makers specifying a timeline for vaccines that are tuned to the Delta variants. Vaccine makers who may have got emergency-use authorisations but are a while away from launch, should ideally move to making vaccines for the Delta variants and not rely on their existing pipeline.

7 APPLE ACQUIRES PRIMEPHONIC

Social audio app Clubhouse has introduced 'spatial audio' technology to enhance the listening experience on its platform. "When you're in the audience, you'll now hear the people around you in 3D, which makes the experience a bit more lifelike and human," the company said in a blog post.

Apple has acquired Primephonic, a renowned **classical music streaming service**. The addition will significantly improve the classical music experience of Apple Music subscribers, beginning with Primephonic playlists and exclusive audio content.

Apple is facing an antitrust challenge in India for allegedly abusing its dominant position in the apps market by forcing developers to use its proprietary in-app purchase system.

Microsoft has partnered with **India's open schooling platform, National Institute of Open Schooling**, to build customized classes, labs and sessions.

8 NASA STARTS AIR TAXI FLIGHT TESTING

NASA started flight testing with Joby Aviation's **All-Electric Vertical Takeoff And Landing (Evtol)** aircraft as part of the agency's **Advanced Air Mobility (AAM)** National Campaign. NASA's goal is to collect vehicle performance and acoustic data for use in modeling and simulation of future airspace concepts.

ALL-ELECTRIC VERTICAL TAKEOFF AND LANDING (EVTOL)

History:

The concept of eVTOL aircraft emerged in 2009 when a video of the **NASA Puffin eVTOL** concept

went viral on November 11th 2009 showcasing a single person concept rendering of the technology, and concept in flight. Following this, the first Puffin

paper at the VFS Specialists Conference on Aeromechanics, on January 9th 2010. This concept utilized a new technology developed at NASA called **Distributed Electric Propulsion (DEP)**. Additional Puffin papers were published on September 13th at the 10th AIAA ATIO Conference, NASA Puffin Electric Tailsitter VTOL Concept and Puffin Redundant Electric Powertrain System.

Objective:

This was fast followed in 2011 by several industry efforts, namely the **AugustaWestland Project Zero (Italy)**, the **Volocopter VC1 (Germany)** and the **Opener BlackFly (US)**. It was officially introduced by the Vertical Flight Society and the American Institute of Aeronautics and Astronautics (AIAA) in 2014 during the 'Transformative Vertical Flight Concepts Joint Workshop on Enabling New Flight Concepts through Novel Propulsion and Energy Architectures' held in Virginia.

Since then, there has been a significant increase in interest among aircraft manufacturers for eVTOLs, and companies such as **Boeing, Airbus and Bell** have also worked on the technology:

- **Airbus A³ Vahana** introduced in 2017 at the Paris Air Show, first flight in January 2018
- **Boeing - Aurora** Flight Sciences PAV, in development since 2017, first flight in 2019
- **Bell Nexus 6HX** unveiled at the CES 2019.

Functions & Classifications:

An **electric vertical take-off and landing (eVTOL)** aircraft is a variety of VTOL (vertical take-off and landing) aircraft that uses electric power to hover, take off, and land vertically. This technology came about thanks to major advances in electric propulsion (motors, batteries, fuel cells, electronic controllers) and the growing need for new vehicles for urban air mobility (air taxi). Examples are being developed by aircraft companies such as Boeing, Airbus, Embraer, Honda, Toyota, Hyundai and NASA. In the future, **eVTOL aircraft** could serve as air taxis for those in cities and surrounding areas, adding another mode of transportation for moving people and goods. When fully integrated into the national airspace, AAM will provide an efficient and affordable system for passenger and cargo transportation, and other applications in the public interest, the space agency said in a statement.

9

IISc - ISRO - MICROBIAL EXPERIMENTS IN OUTER SPACE

What happens to microbes in outer space?

Will their behaviour patterns in such an extreme environment give us insight to help future space missions?

A team of researchers at the **Indian Institute of Science (IISc.)** and **Indian Space Research Organization (ISRO)** have developed a modular, self-contained device to cultivate microorganisms. This could enable scientists to carry out biological experiments in outer space, said IISc. a press release.

In a paper published in the peer reviewed journal **Acta Astronautica**, the team showed how the device can be used to activate and track the growth of **bacterium 'Sporosarcina Pasteurii'** over several days, with minimal human involvement. "Understanding how such microbes behave in extreme environments could provide valuable insight for **Human Space Missions** such as '**Gaganyaan**', **India's first crewed spacecraft set to be launched in 2022.**

The study of microbes in extreme conditions is a growing field.

Scientists have been increasingly exploring the use of lab-on-chip platforms – which combine many analyses into a single integrated chip – for such experiments, they said in the release.

10

THE EV REVOLUTION

The Indian Automotive Sector is close to a \$100 billion industry, and employs over 19 million people (according to the Department of Heavy Industries). Within this is the **Electric Vehicles (EV)** sector, which is

seeing a transformation with new technologies and new ways of ownership. The **changes driving** the sector are

1. **Electric Vehicles.**
2. **Shared Mobility**
3. **Autonomous Driving .**
4. **IoT-enabled connected vehicles**
5. **Increasing line automation in manufacturing.**

The NITI Aayog expects that, by 2030, 80% of two and three-wheelers, 40% of buses, and 30 to 70% of cars will be electric vehicles.

What is Connected Vehicle Technology and What are the Use Cases?

A connected vehicle is one that is capable of connecting over wireless networks to nearby devices. Connected vehicles are an important factor in the advance of IoT.

The use cases range from **connected entertainment systems** that connect with the driver's mobile phone to Internet-connected vehicles that have bi-directional communication with other vehicles, mobile devices and city intersections.

Connected vehicle is an **Internet of Things (IoT)** technology with broad implications. As we shared in our blog post, Safety Trends in Traffic Management, connected vehicle technology is part of the Intelligent Transportations Systems government initiative, and there are many active trials around the world today.

One of the **primary use cases** for the IoT car is safety, via rapid **vehicle-to-vehicle** and **vehicle-to-roadside unit communications** (also known as V2X). But there are many other examples of connected vehicle technology at work in the automotive IoT space as well, as we will explore.



How Does Connected Vehicle Work?

Connected vehicles connect to a network to enable bi-directional communications between vehicles (cars, trucks, buses and trains) and other vehicles, mobile devices and infrastructure for the purpose of triggering important communications and events. In the case of city traffic and intersection safety, for example, those communications can enable vehicles outfitted with connected vehicle technology to continuously communicate their locations and to receive near real-time information that triggers an automated response.

Cars, trucks, buses, and other vehicles will be able to “talk” to each other with in-vehicle or aftermarket devices that continuously share important safety and mobility information with each other. Connected vehicles can also use wireless communication to “talk” to traffic signals, work zones, toll booths, school zones, and other types of infrastructure. The vehicle information communicated is anonymous, so vehicles cannot

be tracked and the system is secure against tampering.

Benefits & Features:

Automotive IoT enables high-speed vehicle-to-vehicle and vehicle-to-infrastructure communications to trigger the following results, many of which are possible today:

- Adaptive cruise control
- Automatic route planning based on real-time conditions
- Traffic redirected away from congestion
- Automatically updated road signage, to report traffic or conditions
- Communications to drivers, notifying them of crash sites or wrong-way drivers ahead
- Automatic vehicle braking to prevent collisions (in trials)
- Autonomous and semi-autonomous vehicle control (in trials)

It further expects that 35% of passenger miles will be on shared vehicles. These changes will dramatically increase access to mobility for the masses. Not only will it create the need for manpower across different profiles but will also change the profile of existing employees within the sector.

Courses galore

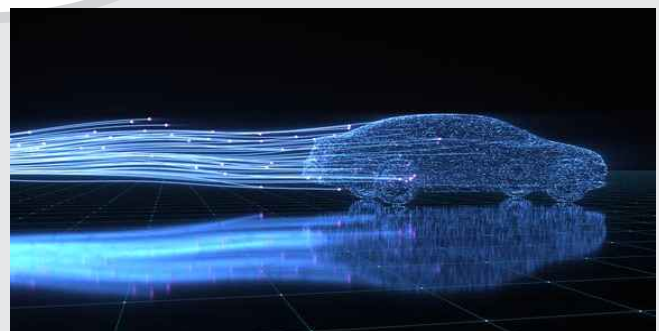
IIT-Delhi offers new M.Tech. courses in Electric Mobility from this academic session, while IIT-Roorkee and IIT-Kharagpur and UPES (University of Petroleum and Energy Studies) are launching similar programmes.

How Will 5G Networks Impact Connected Vehicle Technology?

Soon, connected vehicles will be built with 5G receivers and transmitters. A 5G module will allow connected vehicles to communicate with each other in near real time.

One of the most interesting IoT Features with 5G Receivers:

- Self-driving cars will communicate their position, which will allow them to safely drive side by side as well as merge at high speeds.
- Connected vehicles will communicate at stoplights and stop signs to determine which vehicle has the right of way.
- A vehicle will also be able to connect to a city’s network to find parking, locate a business or



residence, or avoid areas with construction or congestion.

- Most importantly, the dramatic reduction in latency will enable the key reason for connected vehicle technology, which is to prevent accidents and collisions, primarily in city intersections.

The Automotive Research Association of India (ARAI) and National Programme on Technology Enhanced Learning (NPTEL) already offer short training and online courses in EV. The Automotive Skills Development Council (ASDC) has launched an Electric Mobility Nano degree course in association with DIY guru and a training programme called Dakshita in partnership with MG Motor and Autobot India.

NPTEL (National Programme on Technology Enhanced Learning)

NPTEL (National Programme on Technology Enhanced Learning), is a joint venture of the IITs and IISc, funded by the Ministry of Education (MoE) Government of India, and was launched in 2003. Initially started as a project to take quality education to all corners of the country, NPTEL now offers close to 600+ courses for certification every semester in about 22 disciplines.

- Largest online repository in the world of courses in engineering, basic sciences and selected humanities and management subjects

- YouTube channel for NPTEL - most subscribed educational channel, 1.3 billion views and 40+ lakhs subscribers

- More than 56000 hours of video content, transcribed and subtitled

- Most accessed library of peer-reviewed educational content in the world

- Translation of more than 12000 hrs of English transcripts in regional Indian languages

11 ANTIMALARIAL VACCINE - DRUG COMBO EFFICACIOUS IN AFRICA TRIAL

When the first malarial vaccine (named RTS,S) was used along with drugs, the efficacy went up to 70%, or more.

When the World Health Organization's **Strategic Advisory Group of Experts on Immunisation (SAGE)** considers, evidence to decide on the roll out of the first malarial vaccine (RTS,S), the latest body of research - testing a vaccine combination with antimalarial drugs which demonstrated efficacy in preventing hospitalisations from severe malaria and deaths - is likely to bolster the case for voting aye.

Without drugs

According to a paper recently published in the New England Journal of Medicine, the study measured the efficacy of vaccination with or without chemoprevention (drugs). The authors noted: "The combination of these interventions resulted in a substantially **lower incidence of uncomplicated malaria, severe malaria, and death from malaria** than either intervention alone."

One of the authors of the paper, Daniel Chandramohan, of the London School of Hygiene and Tropical Medicine, says: "In the phase III trial, vaccine RTS,S was 50% efficacious in children more than one year old and 25% in infants, compared to a control vaccine during an 18 months follow up period."

When the vaccine was used along with chemoprevention, efficacy went up to 70%, or over. The protective efficacy of the combination as compared with **chemoprevention alone was 62.8% against clinical malaria**, 70.5% against hospital admission with severe malaria and 72.9% against death from malaria. The protective efficacy of the combination as compared with the vaccine alone against these outcomes was 59.6%, 70.6%, and 75.3% respectively, the study notes.

The Malaria vaccine was first authorised in 2015 by the European Medicines Agency for use **in Africa in infants and children**. However, WHO requested for more safety data and a large pilot study was done in Kenya, Malawi and Ghana involving 7,50,000 children. The results of this study will be presented to WHO expert committee.

The instant study involving a combination of the vaccine and drugs was done among 6,861 children (five to 17 months of age) in the Sahel and sub-Sahel regions of Africa, seasonally, with three groups randomly receiving just the drugs, the vaccine alone, and the vaccine and drugs together. They were followed up for three years. "We have now shown that indeed in seasonal transmission areas in Africa this vaccine is safe and is more efficacious when given along with chemoprophylaxis during the transmission season," he adds.

The **malaria vaccine prevents the parasite developing in humans**. However, some break through infections could happen. When there is a vaccine break through infection, the antimalarial drug kills those parasites. In addition, each course of the drug has **Chemoprophylactic Effect** for at least 3 weeks and during that period the vaccine and drugs together prevent any new infections. "The results of this trial are applicable to Africa only," "We don't know how effective it will be in India, as we have not yet tested this vaccine outside Africa."

12 UNDERSEA CABLES -HIGH RISK OF FAILURE FROM SOLAR STORMS

Powerful solar superstorms can destroy undersea cables leading to massive Internet disruption lasting for several months. They can also damage **Satellites, Power Grids, Oil And Gas Pipelines**, research says.

What is Solar Storm?

A solar storm is a **Directional Ejection of a Large Mass of Highly Magnetised Particles from the Sun**. particles will interact with the earth's magnetic field and induce **strong electric currents** on the

When the earth is in the direct path of such solar storms, these magnetised and charged solar particles will interact with the earth's magnetic field and induce **strong electric currents** on the earth's surface that can **damage long-distance cables** which form the backbone of the Internet.

Impact:

Undersea cables have a higher risk of failure compared to land cables due to their large lengths as **current is proportional to the area of the loop** formed by the two grounds and the cable. Hence, power grids, oil and gas pipelines, and networking cables are the most vulnerable.

Communication Satellites could also be among the **severely affected systems** due to **direct exposure to highly charged particles** in the storms.

Solar storms can also create an extra drag on the satellite, particularly in **Low-Earth Orbit (LEO)** systems such as **Starlink causing orbital decay and uncontrolled re-entry to earth**.

Regions Vulnerable:

The scale of impact is different for different regions. **Chinese cities** are more prone to lose connectivity **than Indian cities** because the former connects to longer cables. The U.S. is one of the most vulnerable locations **with a high risk** of disconnection from Europe **during extreme solar events**. The estimated economic impact of an Internet disruption for a day in the U.S. could be over \$7 billion. **Europe is at a lower risk** due to the presence of **shorter land** and undersea cables interconnecting the continent.

For Example: A cable between **Brazil and Europe** will be **less impacted** compared to cables connecting the U.S. and Europe.

Cables along **Eastern and Western Coasts of Africa** are less prone to failures.

13 WHY IS NIPAH'S RETURN IN KERALA A CAUSE FOR CONCERN?

How does it spread?

Is there a cure for this 'emerging zoonotic disease'?

The story so far:

Kerala has reported a **fatality from a case** of infection by the **Nipah virus** in the northern district of Kozhikode bringing back memories of the chaos in **May-June 2018** when the same district reported 18 confirmed cases of which there were 17 laboratory-confirmed deaths. It's the **high mortality associated with the virus** that triggered panic across the State and the country and when it was controlled the State's healthcare surveillance system came in for praise though, as it turned out, it was only a test-run for the pandemic of 2020. Close to 15,000 people who live within a three-kilometre radius of the boy's family, too, are being surveyed for symptoms.

Have outbreaks been frequent?

The human Nipah virus, as it is called, is classified as an **"emerging zoonotic disease"**, meaning that it can transfer to people after being incubated in other species. It was **first recognised in a large outbreak of 276 cases in Malaysia and Singapore from September 1998-1999.**

Prior to the Kerala outbreak of 2018, there have been several Nipah virus outbreaks in **Bangladesh** with spillovers into India **particularly in 2001** and 2007 **at Siliguri** and Nadia in West Bengal. During the outbreak in Siliguri, 33 health workers and hospital visitors became ill after exposure to patients hospitalised with Nipah virus illness. At least 70 people died in the outbreaks in these two districts. In the **2018 outbreak in Kerala**, four from the family of the first person confirmed with the infection succumbed to the viral disease.

Where does the virus originate?

The **Nipah virus (NiV)** is classified as a **"Highly Pathogenic Paramyxovirus"**, and handling it requires the **highest grade of facilities called BS-4.** The natural reservoir for the virus is **Large Fruit Bats** of the Pteropus genus.

From here the virus **may pass on to pigs** which may be infected after **eating fruits that are bitten on by infected bats.** It's also possible for the virus to have jumped to humans from bats without pigs being involved, as in previous outbreaks in Bangladesh, via direct contact or through fruits contaminated by bats.

Kerala has several fruit plantations that host several species of bats. While investigations are on to determine if there are infected bats in the districts, so far no evidence has emerged. In 2018 too, the animal source of the virus wasn't established. The virus takes 6-21 days to incubate and manifest as disease. Unlike in the case of the coronavirus which is airborne and can spread across great distances, **Nipah does not transmit efficiently.** Contact **with body fluids** and an **infected person's respiratory droplets** are the most common ways to catch an infection which explains why those who share a house or hospital facilities harbouring the infected patients are at the greatest risk.

What are the symptoms and how is it diagnosed?

Fever, Delirium, Severe Weakness, Headache, Respiratory Distress, Cough, Vomiting, Muscle Pain, Convulsion and Diarrhoea are the main symptoms. **Inflammation of the brain** (encephalitis) or respiratory diseases are common too, hence the **40%-75% fatality rate.** Because of the lethality of the virus, very few Indian laboratories like the **Pune-based National Institute of Virology** are equipped to isolate the virus using cell culture methods. However, the virus's presence in blood or saliva samples can be determined - like coronavirus tests - in commercial antibody tests that detect the presence of antibodies in the serum. Tests like RT-PCR, undertaken by commercial laboratories, can also be used to detect the virus.

What is the treatment protocol?

Currently, there is no known treatment or vaccine for either people or animals. **Ribavirin, an antiviral,** may have a role in reducing mortality among patients with encephalitis caused by the Nipah virus disease, according to a fact-sheet by the **National Centre for Disease Control.** The thrust of treatment relies on managing symptoms.

There are, however, **Immunotherapeutic Treatments** (monoclonal antibody therapies) that are under development and evaluation. One such monoclonal antibody, **m102.4, has completed Phase 1 clinical trials**, and has been used on a compassionate use basis. In addition, the antiviral treatment Remdesivir has been effective in non-human primates when given as post-exposure prophylaxis, according to the U.S. Centers for Disease Control and Prevention. There are no approved vaccines but recent studies have shown that a **Covishield-like vaccine** fully protected a small group of primates (Green African monkeys). Another vaccine candidate has been in preliminary human trials, with the results expected later this year.

Covishield-like Vaccine Reports Success in Monkey Trials Against Nipah Virus

Can a Covishield-like vaccine give protection against the Nipah virus? Preliminary animal trial results seem to suggest so. Researchers at the **Jenner Institute, Oxford University and the National Institutes of Health, United States**, reported that The **Chadox1 Vaccine Vector**, when customised to the Nipah virus, **Fully Protected African Green Monkeys**, a primate species.

The study appears on the pre-print server **Biorxiv**, indicating that it is yet to be peer-reviewed. **ChAdOx1 is a multi-purpose vaccine vector**, meaning it can be customised to carry DNA from a wide variety of pathogens. The version of **ChAdOx1** that goes into human arms as **Covishield or AstraZeneca** is the ChAdOx1 with a piece of **spike protein of the Sarscov2**.

What is ChadOx1 NiV?

For the Nipah study, the scientists loaded a piece of glycoprotein from a Nipah virus strain found in Bangladesh, where annual outbreaks occur. This test vaccine for the purposes of the study was called **ChadOx1 NiV**.

How ChadOx1 NiV Project Done?

One group of four monkeys was administered either two shots or a single shot of the ChadOx1NiV and another group of four was given shots of a **dummy protein (ChAdOx1 GFP)**, again vectored by ChAdOx1. All the eight were then “challenged” or artificially infected with real Nipah virus, some given via the nose and others through the throat.

Within three days, the unvaccinated group manifested disease symptoms and within **5-7 days were euthanised** after they were confirmed to manifest severe disease. On the other hand, the vaccinated animals showed no disease.

Throat and nose swabs from all unvaccinated animals revealed evidence of replicating virus whereas swabs from one only one vaccinated animal showed such signs of virus. “These data suggest the vaccine may provide close to complete **protective immunity in African green monkeys**,” the scientists report in their study, “If the next pandemic were to be caused by a member of the genus **Henipavirus** [to which the Nipah virus belongs], the current study could be influential in the development of a rapid vaccine.”

The study in monkeys follows a study by the group on Syrian hamsters. Encouraging studies on the primates pave the way for trials in people. For instance, the group’s work on developing a vaccine for the **Middle Eastern Respiratory Virus (MERS)** and tested in rhesus macaques paved the way for the development of the AstraZeneca vaccine, which was among the first vaccines to be approved.

Vaccine Against Hendra Virus

Though several vaccine candidates have been evaluated in animal models, only one has been cleared for human trials. **HeV-sG, a soluble form of the HeV receptor binding glycoprotein**, was marketed by Zoetis, Inc. in Australia as an equine vaccine against the Hendra virus, which belongs to the same genus as the Nipah virus. Recently, it was shown that HeV-sG vaccination could protect the African green monkeys against the lethal NiV disease as early as seven days post immunisation. In March 2020, it was reported that enrolment has begun for a first of its kind Phase I randomised placebo-controlled clinical trial, with results expected in October.

It was yet another triumphant moment for the **APJ Abdul Kalam Missile Complex** here when Defence Minister Rajnath Singh handed over the **first Medium Range Surface to Air Missile (MRSAM)** System to Indian Air Force (IAF) chief R.K.S. Bhadauria, earlier this week in the presence of Defence Research Development Organisation (DRDO) chairman G. Satheesh Reddy.

Scientists at the Kalam Complex, including those at Research Centre Imarat (RCI) housed inside, had played a key role in making this advanced missile in association with **Israel Aerospace Industries (IAI)**.

Medium Range Surface to Air Missile (MRSAM)

Medium Range Surface-to-Air Missile (MRSAM) Army weapon system achieved direct hits against high speed aerial targets at Integrated Test Range, Chandipur off the coast of Odisha on March 30, 2022. The launches were carried out establishing **the accuracy and reliability of the weapon system against targets covering the sea skimming and high altitude functionality within the envelope.** Performance of all weapon system components including missile, weapon system radar and command post have been validated during these trials. The flight tests were carried out in the presence of senior officials from Defence Research and Development Organisation (DRDO) and the Indian Army. With the conclusion of flight trials for different ranges and scenarios, the system has completed its development trials.

Surface-to-Air Missile

A surface-to-air missile (**SAM**), also known as a ground-to-air missile (**GTAM**) or **surface-to-air guided weapon (SAGW)**, is a missile designed to be launched from the ground to destroy aircraft or other missiles. It is one type of anti-aircraft system; in modern armed forces, missiles have replaced most other forms of dedicated anti-aircraft weapons, with anti-aircraft guns pushed into specialized roles.

The American **Nike Ajax** was the first operational guided missile SAM system, and the Soviet Union's **S-75 Dvina** was the most-produced SAM. Widely used modern examples include the **Patriot and S-300** wide-area systems, **SM-6 and MBDA Aster Missile** naval missiles, and short-range man-portable systems like the **Stinger and Strela-3**.

GOT systems

In every go-onto-target system there are three subsystems:

- Target tracker
- Missile tracker
- Guidance computer

The way these three subsystems are distributed between the missile and the launcher result in two different categories:

- Remote control guidance: The guidance computer is on the launcher. The target tracker is also placed on the launching platform.
- Homing guidance: The guidance computers are in the missile and in the target tracker.

Remote Control Guidance

These guidance systems usually need the use of radars and a radio or wired link between the control point and the missile; in other words, the trajectory is controlled with the information transmitted via radio or wire. These systems include:

- **Command guidance:** The missile tracker is on the launching platform. These missiles are fully controlled by the launching platform that sends all control orders to the missile. The two variants are
 - **Command to line-of-sight (CLOS)**
 - **Command off line-of-sight (COLOS)**
- **Line-of-sight beam riding guidance (LOSBR):** The target tracker is on board the missile. The missile already has some orientation capability meant for flying inside the beam that the launching platform is using to illuminate the target. It can be manual or automatic.

More than **100 medium, micro and small scale industries** were involved in the project, most of them based in and around the capital here, but which cannot be named. This has also helped in scaling up technologies and skill to global standards, they claimed.

The lush green **4,000 acre missile complex conceived by former president Kalam** also houses the **Advanced Systems Laboratory (ASL)** and the **Defence Research & Development Lab (DRDL)** and it has been in the forefront in the development of the strategic missile development projects including avionics over the years.

Incidentally, Indian Navy has already inducted its version of MRSAM and this latest version has been tweaked to meet IAF needs with a hat-trick of successful trials for **“Accuracy, Reliability and Efficacy”** conducted five years ago at Balasore. “An Army version of the missile is in the advanced stage of development,” informed senior officials.

With BDL the lead production partner, IAF has contracted for 18 firing units with each consisting of 24 missiles each. **MRSAM system provides point and area air defence** for ground assets against threats from **Fighter Aircraft, Uavs, Helicopters, Guided And Unguided Munitions, Subsonic And Supersonic Cruise Missiles**. It is capable of engaging multiple targets at ranges up to 70 km and is powered by indigenously developed rocket motor and control system for achieving high manoeuvrability.

Firing unit has

Missiles - Combat Management System (CMS) - Mobile Launcher Systems (MLS)-Advanced Long Range Radar- Mobile Power System (MPS)-Radar Power System (RPS)- Reloader Vehicle (RV) and Field Service Vehicle (FSV).

“Development of **Brahmos missile with Russia** is the only comparable missile operating system developed indigenously as part of the **Atma Nirbhar** and **Skill India initiatives of the government,**” they said.

15 CLONE YOUR CAMEL: BEAUTY PAGEANTS, RACES SPUR HIGH DEMAND

Cloning is in high demand in the competitive world of camel beauty pageants, leaving scientists at a Dubai clinic working round the clock to produce carbon-copy beasts. Technology now allows wealthy clients to replace their most beautiful camel with one just like it.

At the Reproductive Biotechnology Center, with views of the UAE city's towering skyscrapers, scientists pore over microscopes while dozens of cloned camels roam outside.

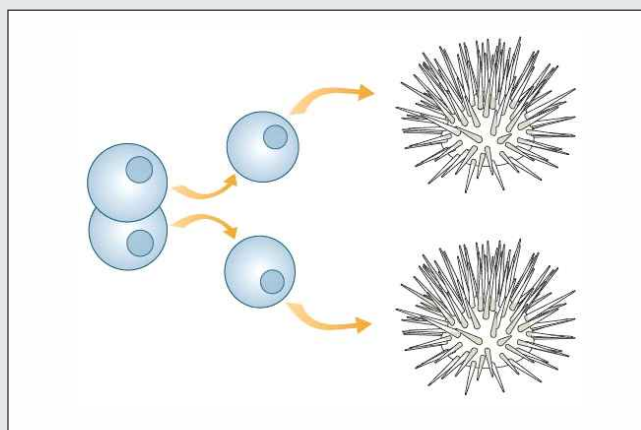
Beauty pageants are not the only driver of the camel cloning industry. Many customers want to reproduce racing camels, or animals that produce large amounts of milk.

The History of Cloning

1885 - First-ever demonstration of artificial embryo twinning

Sea Urchin - Hans Adolf Eduard Driesch

The sea urchin is a relatively simple organism that is useful for studying development. Driesch showed that by merely shaking two-celled sea urchin embryos, it was possible to separate the cells. Once separated, each cell grew into a complete sea urchin. This experiment showed that each cell in the early embryo has its own complete set of genetic instructions and can grow into a full organism.

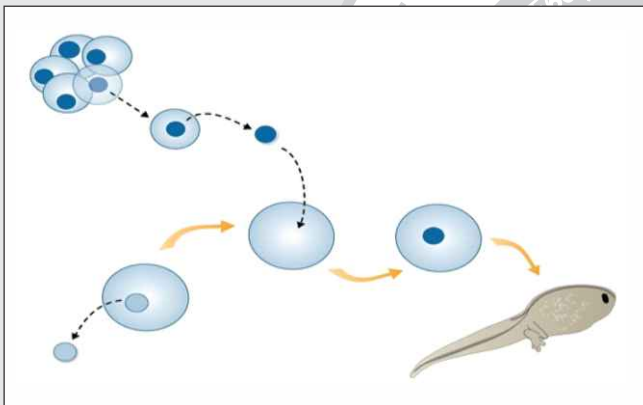


1952 - First successful nuclear transfer

Frog - Robert Briggs and Thomas King

Briggs and King transferred the **nucleus from an early tadpole embryo into an enucleated frog egg** (a frog egg from which the nucleus had been removed). The resulting cell developed into a tadpole.

The scientists created many **normal tadpole clones using nuclei** from early embryos. But just like Spemann's salamander experiments, cloning was less successful with donor nuclei from more advanced embryos: the few tadpole clones that did survive grew abnormally. Most importantly, this experiment showed that nuclear transfer was a viable cloning technique. It also reinforced two earlier observations. First, the nucleus directs cell growth and, ultimately, an organism's development. Second, embryonic cells early in development are better for cloning than cells at later stages.



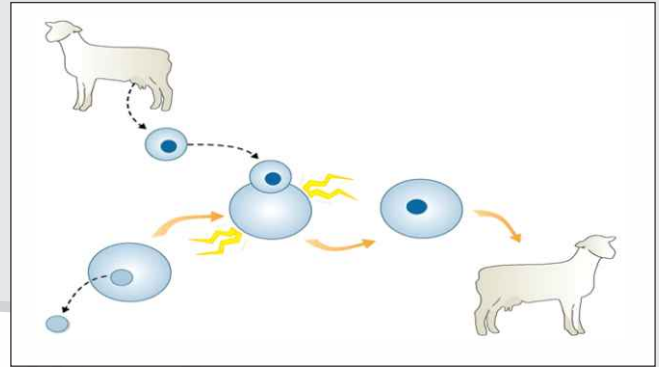
1996 - Dolly: First mammal created by somatic cell nuclear transfer

Sheep - Ian Wilmut and Keith Campbell

In this landmark experiment, Wilmut and Campbell created a lamb by transferring the nucleus from an adult sheep's udder cell into an enucleated egg. Never before had a mammal been cloned from an adult somatic cell. What was the big deal?

Every cell's nucleus contains a complete set of genetic information. However, while embryonic cells are ready to activate any gene, differentiated adult cells have shut down the genes that they don't need for their specific functions. When an adult cell nucleus is used as a donor, its genetic information must be reset to an embryonic state. Often the resetting process is incomplete, and the embryos fail to develop. Of 277 attempts, only one

produced an embryo that was carried to term in a surrogate mother. This famous lamb, named Dolly, brought cloning into the limelight. Her arrival started conversations about the implications of cloning, bringing controversies over human cloning and stem cell research into the public eye.



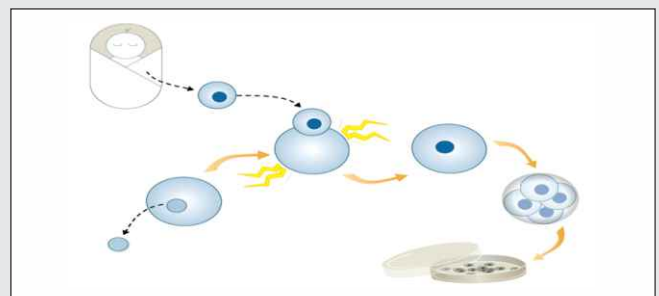
2013 - Human embryonic stem cells - somatic cell nuclear transfer

Human - Shoukhrat Mitalipov and colleagues

Overcoming decades of technical challenges, Mitalipov and colleagues were the first to use somatic cell nuclear transfer to create a human embryo that could be used as a source of embryonic stem cells. The resulting stem cell lines were specific to the patient they came from, a baby with a rare genetic disorder.

In this experiment, researchers took a skin cell from the patient and fused it with a donated egg cell. Key to the success of the experiment were modifications to the culture liquid in which the procedure was done and to the series of electrical pulses used to stimulate the egg to begin dividing.

Following the cloning controversy of 2004–2005, in which South Korean scientists falsely claimed to have used somatic cell nuclear transfer to create embryonic stem cell lines, the scientific community demanded much stronger evidence that the procedure had actually been successful.



Saud Al-Otaibi, who runs a camel auction in Kuwait, said customers' judgement of the animals' looks is key to his business.

Twelve years ago, **Dubai claimed the world's first cloned camel.**

Injaz, a female whose name means achievement in Arabic, was born on April 8, 2009, after more than five years of **work by Wani and others.**

"We have cloned some she-camels that produce **more than 35 litres of milk a day**," said Wani, compared to an average of five litres in normal camels.

Camel milk is commonly found next to regular milk at supermarkets in the Gulf, while meat products such as **camel carpaccio** are served in fancy restaurants.

16 ARTIFICIAL INTELLIGENCE AND EDUCATION

Will edutech firms be able to tap on to sophisticated AI-technologies?

In popular imagination, **Artificial Intelligence (AI)** is seen as transforming the education system by focusing on developing learner-centric methods. Indeed, the past decade has witnessed schools shifting from conventional teaching methods to smart education with the aim of augmenting students' learning experiences. This overhaul has been further fuelled by the present pandemic caused by the novel coronavirus.

Artificial Intelligence (AI)

Understanding the 4 Types of Artificial Intelligence (AI)

According to the current system of classification, there are four primary AI types: **Reactive, Limited Memory, Theory Of Mind, And Self-Aware.**

Reactive AI

The most basic type of artificial intelligence is reactive AI, which is programmed to provide a predictable output based on the input it receives. Reactive machines always respond to identical situations in the exact same way every time, and they are not able to learn actions or conceive of past or future.

Examples of reactive AI include:

- Deep Blue, the chess-playing IBM supercomputer that bested world champion Garry Kasparov
- Spam filters for our email that keep promotions and phishing attempts out of our inboxes
- The Netflix recommendation engine

Reactive AI was an enormous step forward in the history of artificial intelligence development, but these types of AIs can't function beyond the tasks they were initially designed for. That makes them inherently limited and ripe for improvement. Scientists developed the next type of AI from this foundation.

Limited Memory AI

Limited memory AI learns from the past and builds experiential knowledge by observing actions or data. This type of AI uses historical, observational data in combination **with pre-programmed information to make predictions and perform complex classification tasks.** It is the most widely-used kind of AI today.

For example, Autonomous vehicles use limited memory AI to observe other cars' speed and direction, helping them "read the road" and adjust as needed. This process for understanding and interpreting incoming data makes them safer on the roads. However, limited memory AI – as its name suggests – is still limited. The information that autonomous vehicles work with is fleeting, and it is not saved in the car's long-term memory.

Theory of Mind AI

Want to hold a meaningful conversation with an emotionally intelligent robot that looks and sounds like a real human being? That's on the horizon with theory of mind AI. With this type of AI, **machines will acquire true decision-making capabilities** that are similar to humans. Machines with theory of mind AI will be able to understand and remember emotions, then adjust behavior based on those emotions as they interact with people.

There are still a number of hurdles to achieving theory of mind AI, because the process of shifting behavior based on rapidly shifting emotions is so fluid in human communication. It is difficult to mimic as we try to create more and more emotionally intelligent machines.

That said, we are making progress. The Kismet robot head, developed by Professor Cynthia Breazeal, **could recognize emotional signals on human faces** and replicate those emotions on its own face. Humanoid robot Sophia, developed by Hanson Robotics in Hong Kong, can recognize faces and respond to interactions with her own facial expressions.

Self-aware AI

The **most advanced type of artificial intelligence** is self-aware AI. When machines can be aware of their own emotions, as well as the emotions of others around them, they will have a level of consciousness and intelligence similar to human beings. This type of AI will have desires, needs, and emotions as well.

Machines with this type of AI will be self-aware of their internal emotions and mental states. They will be able to make inferences (such as "I'm feeling angry because someone cut me off in traffic") that are not possible with other types of AI. We haven't developed this type of sophisticated AI yet and don't have the hardware or algorithms to support it.

COVID-19 necessitated schools to swiftly shift to online platforms for uninterrupted teaching and learning. The proliferation of smart digital tools and data science in education system has provided many dividends. But what constitutes **AI and how much of AI is really being used in educational technology?** A closer look at what is currently deployed in smart education vis-a-vis the complexity of state-of-the-art AI technologies is needed to prepare a road map for future.

Education plays a critical role in moulding the future of society. In order to leverage the unprecedented advancements in information and communication technology, modern education systems need re-creation and revamping of content and delivery methods. **Educational technology (Edutech) firms** in India have initiated the use of smart tools to change the ways in which teachers teach and the ways in which students learn. Teaching-learning methods are undergoing tremendous changes as these firms are augmenting human learning with computer-based learning. This approach is trending because they are tapping on "personalised learning". With an increasing number of students, teachers may find it difficult to focus on each and every student on a continuous basis. Further, different students have different learning styles and they learn at a different pace. Thus, the firms believe that a one-size-fits-all learning approach is not the best method of education.

Personalised learning delivers content that specifically caters to the needs, preferences and competencies of individual learners. In collaboration with teachers and subject matter experts, these firms create a comprehensive database of questions, animated videos, quizzes, and related weblinks.

How does the role of the teacher change? Smart tools augment the education system as the teacher is relieved from manual repetitive tasks such as taking attendance and tracking student's daily performance. Teachers can track the progress of the students through a digital dashboard while devoting more time to develop critical and logical thinking among students. The teacher can focus on developing the skills of questioning and reasoning from an early stage of life. In addition, teachers can train students on soft skills and life skills including communication, empathy, social and leadership skills. Teachers can spend their time and energy in honing the personality of students and in developing a values-driven mindset.

Can true AI ever find its way in education system?

The smart education platforms have been cruising on the success of true AI systems. However, technologically speaking, these different platforms sitting under the same AI umbrella tend to vary in their level of sophistication by gargantuan amounts. In popular imagination, these differences are hardly emphasised. Thus, **IBM's Deep Blue beating the world chess champion Garry Kasparov in 1996** is spoken in the same breath as the smart-tool educational platforms assisting teachers and students.

Self Learning capabilities of Computer?

Humans have an ability to think, reason, learn and acquire knowledge from experience, whereas computers learn through algorithms. DeepMind's AlphaGo (AI-program) defeated the Go-World Champion Lee Se-dol in 2016 who decided to retire from professional play after declaring AI invincible.

While **DeepBlue and AlphaGo** were trained on the millions of possible moves as played by the grandmasters, a quantum leap was attained by DeepMind when in 2017 AlphaGo Zero 'trained itself' in a few days starting from scratch with random moves, most importantly, **without any human input of historical data**. While it is mind-boggling to note that AI has the ability to self-train and has reached superhuman level, it is critical to understand the power used by AlphaGo. AlphaGo used 1 megawatt of power as compared to a mere 20 watt of power used by Lee — 50,000 times more power than the human brain of the world champion.

A journal article published in Nature highlighted that 1920 central processing units (CPUs), 280 graphics processing units (GPUs), and the brains of more than 100 scientists were behind AlphaGo that played against Lee's brain (and his 1 mug of coffee!) The point here is that while we are awestruck by the abilities of AI, we must also be aware of the massive computation power demanded by these computer algorithms, thus making them not-so-easily available for the mass market.

17 BRUCELLA VACCINE BEING GIVEN TO CALVES

Cattle and buffalo calves being vaccinated against **brucellosis** in Yadgir.

The Animal Husbandry Department in Yadgir has planned to vaccinate cattle and buffalo calves to prevent brucellosis disease under **National Animal Disease Control Programme (NADCP)**, a flagship scheme launched by the Union government.

Around 20,000 cattle and buffalo calves will be vaccinated this year. The **second round** will be carried out after **four months** and the **third** will be after **eight months** from the end of the first round, respectively.

'Brucellosis' is an **infectious disease** caused by **bacteria**. Once cattle or buffalo is infected with brucellosis disease, it will **cause abortion or loss of re-productivity**.

18 LACK OF MILITARY-CIVIL COOPERATION FRAMEWORK IMPEDING INNOVATION IN SPACE TECH: IAF VICE CHIEF

The lack of framework for cooperation between military and civilian entities is preventing India from innovating and manufacturing next-generation space technology on a large scale, Air Marshal Vivek Ram Chaudhari.

"In our context, the Indian space eco system - at present being largely civilian in nature -- works around the Space Commission and its constituent Department of Space," said the Vice Chief of the Indian Air Force (IAF) at an event of industry body FICCI.

The lack of robust 'military-civil fusion' - like framework is preventing us from innovating and manufacturing next-generation space technologies on a large scale, he said, adding there is a need for a concerted focus on this regard.

According to the US State Department, 'military-civil fusion' or MC is an aggressive, national strategy of the Chinese Communist Party (CCP) with a goal to enable China to develop the most technologically advanced military in the world.

A key part of MCF is the elimination of barriers between China's civilian research and commercial sectors, and its military and defense industrial sectors, stated the US State Department. Chaudhari said India, **at present, does not have indigenous capability to observe, track and identify non-cooperative objects in outer space**.

"This not only restricts our defensive counter-space capabilities but also limit our anti-satellite capability in future," he mentioned. Therefore, space situational awareness is the need of the hour and we should be able to know hostile manoeuvres by adversaries' space objects, he stated.

"The existing capabilities of the **ISRO (Indian Space Research Organisation)** and the **DRDO (Defence Research and Development Organisation)** would need to be integrated into the air surveillance picture of the IAF. This integration would be a gradual progression to a comprehensive space surveillance network," he noted.

Key Area of Development & Research

1. In India's context, another key focus area should be **Supplementing Our Ground-Based Ballistic Missile Architecture** by creating space-based ballistic missile defence capabilities, Chaudhari mentioned. "It should enable early warning detection and destruction of ICBMs (intercontinental ballistic missiles) along with location for launch pads and prediction of impact points," he said.

2. Another changing paradigm in the space application is the **growing ubiquity of low-earth orbit satellites or LEO satellites**, particularly in domains which were historically done purely by geo-synchronous satellites, he said. "While traditional communication satellites with geo-synchronous orbits have proved their worth due to longer service life and wide coverage area, communication satellites in lower and medium earth orbits have their own advantages," he noted. The disadvantage of requirement of large number of satellites can be mitigated by faster communication and lower vulnerability when compared to existing geo-synchronous satellites, he added.

3. The Defence Space Agency (DSA), which is the lead agency for aggregating the demands of the armed forces in India, could play a key role in synergising the military-civil space cooperation to achieve the desired capabilities.

19 U.N. APPEALS FOR \$606 MILLION TO MEET AFGHANS' NEEDS

The United Nations (U.N.) is making an emergency appeal for \$606 million to help nearly 11 million people in Afghanistan for the remaining four months of 2021. It says, they face a humanitarian crisis exacerbated by drought, displacement, chronic poverty and the sharp increase in hostilities as the Taliban swept to power.

Why UNOCHA in News Recently?

The U.N. Office for the Coordination of Humanitarian Affairs (UNOCHA) already has a \$1.3 billion appeal for Afghanistan for the entire year of 2021, but it is only 39% funded — amounting to just \$498 million.

The agency's "Flash Appeal", includes the \$413 million from the original appeal that has not been funded and \$193 million in new needs. The money aims to assist 11 million people with critically needed food and "livelihood assistance", including 2 million people not covered in the original appeal.

It is also meant to provide essential health services to 3.4 million Afghans, treatment for acute malnutrition for more than 1 million children and women, water and sanitation for 2.5 million people, and protection for 1.5 million people, including children and survivors of gender violence.

According to the agency, "the recent escalation in conflict and resulting upheaval has only exacerbated" the needs of Afghans whose lives have been devastated by 40 years of war, recurring natural disasters, chronic poverty, drought and the pandemic. Even prior to the August 15 Taliban takeover of the country, "the humanitarian situation in Afghanistan was one of the worst in the world".

20 EXCESSIVE SCREEN TIME DELAYS CHILDREN'S DEVELOPMENT - STUDY

Too much exposure to television or mobile phone screens for children below the age of five could be detrimental to their development.

The study assessed the performance of the children and their understanding of commands from their mothers, and found that children who had been **exposed to several hours of television or mobile phone**

screens exhibited an inability to comprehend what they were being told.

As much as 70% of the 718 children aged six months to five years, who were studied, had been exposed to excessive screen time, the study found.

Exposed early to screens

Most children had been introduced to screens as early as when they were six months of age, and a majority of the children had been exposed to television screens before they turned a year old. **Excessive Screen Time (ST)** results in a delay in development of expressive and receptive language. Children learn to express themselves by imitating their parents or caregivers. By the age of three, they start speaking a lot of words. But those exposed to too much ST are unable to do so.

Eight parameters

“We have taken eight parameters to understand the development of the child. We say there is a developmental delay when the child is unable to understand what the mother is saying. When the mother says ‘Come here and sit down’, she is issuing two commands. But the child manages to understand just one command. That is a developmental delay,” Dr. Varadarajan explained.

The study found that children exposed to ST tried to imitate the slang they picked up from watching television. They used inappropriate words and were unable to understand simple commands.

“We can extrapolate it to the current scenario, but the World Health Organisation guideline allows an hour of viewing educational content online,” she noted.

21 MRPL INVENTS GELATOR TO REMOVE OIL SPILLS, GETS PATENT

The **Mangalore Refinery and Petrochemicals Ltd. (MRPL)** has invented an oil gelator chemical to **remove oil spills from sea** as well as earth surface and has obtained patent for the same from the Central government’s patent office.

A release from MRPL said the invention comprises new organic gel-forming molecules derived from simple and cheaper chemicals that were synthesised and characterised.

The molecules exhibit good gelation behaviour when they are exposed to oil spillages. Due to this behaviour, they get solidified quickly. These solidified gels could **easily be recovered from the surface of the land or water bodies**. It is an effective method to mitigate oil pollution from the environment.

The invention comes at a time when oil spillages are causing detrimental effects on the environment and living organisms. Spillage includes any spill of crude oil, gasoline, diesel fuel, jet fuel, kerosene, hydraulic oil, lubricating oil, etc. The clean up action in the event of spillage includes containing the spread of oil spill and recover or remove the floating oil from the water surface. One of the removal methods was to convert the oil film on the water surface into a semi-solid gel and contain the spread. Some mechanical exercise was needed to remove the jellified oil.

The patent gives MRPL the exclusive right to exclude others from copying, manufacturing, selling, or importing the invention without permission. The patent for organic gelators was the third patent for **MRPL with the first two being a patent for “Process Distillation of Petroleum Fractions - by using fuel gas/hydrocarbon vapours instead of steam”** Oxidative Treatment of Refinery Spent Caustic.

22 CHANDRAYAAN-2 ORBITER PAYLOADS MADE DISCOVERY-CLASS FINDINGS, SAYS ISRO

India’s **second Moon mission Chandrayaan-2** lifts off onboard **GSLV Mk III-M1** launch vehicle from Satish Dhawan Space Center at Sriharikota in Andhra Pradesh.

The observations of the Chandrayaan-2 orbiter payloads have yielded discovery-class findings, according to the Indian Space Research Organisation (ISRO).

There were **eight scientific payloads** hosted on the orbiter craft.

They are:

1. Chandrayaan-2 Large Area Soft X-ray Spectrometer (CLASS),
2. Solar X-ray Monitor (XSM).
3. CHandra's Atmospheric Compositional Explorer 2 (CHACE 2),
4. Dual Frequency Synthetic Aperture Radar (DFSAR),
5. Imaging Infra-Red Spectrometer (IIRS),
6. Terrain Mapping Camera (TMC 2),
7. Orbiter High Resolution Camera (OHRC),
8. Dual Frequency Radio Science (DFRS) experiment.

Earlier this week, ISRO opened up its scientific discussions on Lunar Science to "the people of the country, to engage the Indian academia, institutes, students, and people from all disciplines and walks of life", in the form of a two-day 'Lunar Science Workshop & Release of Chandrayaan-2 Data'.

The workshop commemorated the **completion of two years of the Chandrayaan-2 orbiter in the lunar orbit**. The events were conducted in virtual mode.

ISRO Chairman and Secretary in the Department of Space (DoS) K. Sivan inaugurated the workshop and released the documents on Chandrayaan-2 science results and data products for utilisation by the scientific community.

"The lunar workshop delivered the big news of bunch of discovery-class of findings by Chandrayaan-2," the **Bengaluru headquartered India's national space agency** said.

Role of CHandra's Atmospheric Compositional Explorer 2 (CHACE 2)

The **mass spectrometer CHACE-2**, in its pursuit to conduct **first-ever in-situ study** of the composition of the **lunar neutral exosphere from a polar orbital platform**, detected and studied the variability of **the Argon-40 at the middle and higher latitudes of the Moon**, depicting the radiogenic activities in the mid and higher latitudes of the Lunar interior, it said.

Role of Solar X-ray Monitor (XSM)

The discovery of **Chromium and Manganese** on the lunar surface, which are available in trace quantities, by the **CLASS Payload** was announced. The observations of **Microflares Of The Sun**, during the quiet-Sun period, which provide important clues on the coronal heating problem of the Sun, were made by the XSM payload.

Role of Imaging Infra-Red Spectrometer (IIRS)

The first-ever **unambiguous detection of the hydration features of the Moon** was achieved by **Chandrayaan-2** with its infra-red spectrometer payload IIRS, which captured clear signatures of **Hydroxyl and water-ice on the lunar surface**, ISRO said.

Role of Dual Frequency Synthetic Aperture Radar (DFSAR)

The DFSAR instrument could study the **subsurface features of the Moon**, detected signatures of the sub-surface water-ice, and achieved high resolution mapping of the lunar morphological features in the polar regions, it was stated.

"The observations (of Chandrayaan-2 orbiter payloads) have been yielding intriguing scientific results, which are being published in peer-reviewed journals and presented in international meetings," Mr. Sivan said.

Chandrayaan-2, ISRO said, has the feat of imaging the Moon from 100 km lunar orbit with "best-ever" achieved resolution of 25 cm with its **OHRC**.

The TMC 2 of Chandrayaan-2, which is conducting imaging of the Moon at a global scale, has found interesting geologic signatures of lunar crustal shortening, and identification of volcanic domes, the ISRO said.

The DFRS experiment onboard Chandrayaan-2 has studied the ionosphere of the Moon, which is generated by the **solar photo-ionisation** of the neutral species of the lunar tenuous exosphere, it was noted.

The science data archived in **Indian Space Science Data Centre (ISSDC)** at Byalalu, near here, are being disseminated to public through its '**PRADAN**' portal. The questions received from the academia, institutes and students were addressed by the ISRO scientists during the two-day deliberations.

A panel discussion provided the opportunity to academia, institutes and students to interact with the ISRO scientists on lunar science and Chandrayaan-2, ISRO said.

Chandrayaan-2 is the **second spacecraft** in the Indian series of Lunar exploration satellites. It comprised an orbiter, lander named **Vikram And Rover Named Pragyan** to explore the **Unexplored South Polar Region** of the Moon.

It was launched on July 22, 2019 from the Sriharikota spaceport by GSLV Mk-III. It was **inserted into a lunar orbit on August 20, 2019**, with firing of thrusters on the orbiter. The orbiter and lander modules were separated as two independent satellites on September 2, 2019.

Later, Vikram lander's descent was as planned and normal performance was observed up to an altitude of 2.1 km from Lunar surface on September seven, 2019. Subsequently, communication from the lander (with the six-wheeled Pragyan rover accommodated inside it) was lost and the lander had a hard landing on the lunar surface. A successful soft-landing **would have made India the fourth country** after the erstwhile **Soviet Union, the United States, and China** to do so, according to ISRO officials.

The orbiter, placed in its intended orbit around the Moon, will enrich our understanding of the **Moon's evolution and mapping of minerals and water molecules in polar regions**, using its eight advanced scientific instruments, according to ISRO. The precise launch and optimised mission management have ensured a long life of almost seven years for the orbiter instead of the planned one year, it said.

23 CORONAVIRUS VARIANTS MU, C.1.2 NOT IN INDIA - GENOME CONSORTIUM INSACOG

Neither of the two recent coronavirus variants identified by the World Health Organisation (WHO) that may pose an international threat, have been found in India, the **India SARS-CoV2 Genome Consortium (INSACOG)** said in its latest weekly update. The INSACOG is a consortium of labs tasked with analysing emerging coronavirus variants.

On August 30, the WHO has added B.1.621 (including B.1.621.1) to the list of **Variants of Interest (VoI)** and **called it 'Mu'**. VoI is a step lower than **VoC or Variant of Concern**. Mu has mutations that potentially allow it to evade the immunisation conferred by vaccines. The global prevalence of the Mu variant has declined and is currently below 0.1%. However, the prevalence in Colombia (39%) and Ecuador (13%) has consistently increased, according to the WHO.

The agency has also added C.1.2 as a new VoI. C.1.2 is a sub-lineage of the C.1 variant described in South Africa but did not spread globally. The C.1.2 variant contains mutations of all the three types known to increase the virus' transmissibility and aids immune escape.

This lineage of viruses comprised rise 0.2% of cases in South Africa in May 2021 but rose to 2% in July 2021. "There are only 101 cases globally, **mostly in Africa** with isolated samples from **China, New Zealand, Portugal and Switzerland and UK**, without any evidence of local transmission," the INSACOG report adds.

"Neither Mu, nor C.1.2 are seen in India so far. Existing recommendations on sequencing of positive samples from international travellers may be more strongly implemented. Monitoring and evaluation of further data appears to be adequate at this time," the INSACOG report notes.

What is Ay4? Why was it in news recently?

The dominant variant in India was the Delta variant, that now had diversified into nearly **25 sublineages globally**. The INSACOG tracks 12 of these in India and a Delta sublineage, **called AY.4**, remained the most prominent one in India. While possessing distinct characteristics they weren't "functionally biologically different" from the Delta variant, the report said.

China cited a **United Nations Security Council (UNSC) resolution** issued after the **1998 nuclear tests** to question India's missile programme amid reports of an upcoming test for the **Agni-V Intercontinental Ballistic Missile**.

The Foreign Ministry spokesperson was referring to the **UNSC resolution 1172**, adopted in June 1998. The resolution, in the **aftermath of the 1998 nuclear tests**.

What is UNSCR 1172?

United Nations Security Council resolution 1172, adopted unanimously on 6 June 1998, after hearing of nuclear tests conducted by **India and Pakistan in May 1998**, the Council condemned the tests and demanded that both countries **refrain from engaging in further tests**.

It calls upon India and Pakistan immediately

1. To stop their nuclear weapon development programmes.
2. To refrain from weaponisation or from the deployment of nuclear weapons
3. To cease development of ballistic missiles capable of delivering nuclear weapons
4. Any further production of fissile material for nuclear weapons.
5. To confirm their policies not to export equipment, materials or technology that could contribute to weapons of mass destruction or

missiles capable of delivering them and to undertake appropriate commitments in that regard.

The Security Council began by stating that all the proliferation of nuclear weapons posed a **threat to international peace and security**. It was concerned at the tests conducted by India and Pakistan and of a potential arms race in South Asia. The importance of the **Nuclear Non-Proliferation Treaty (NPT)**, the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and the dismantling of nuclear weapons was emphasised.

The Security Council condemned the Indian Pokhran-II test on 11 and 13 May and the **Pakistani Chagai-I** test on 28 and 30 May. It demanded that both countries stop testing immediately and asked all countries to **no longer carry out nuclear weapons tests**. India and Pakistan were also asked to show restraint, refrain from provocative moves and to resume dialogue.

"As for whether India can develop ballistic missiles capable of delivering nuclear weapons, the **UNSCR 1172** already has clear stipulations," Foreign Ministry spokesperson Zhao Lijian said in response to questions over reports on the upcoming test, which has received wide attention in the Chinese press with focus on the detail that the 5,000 km-range nuclear-capable missile **would bring many cities in China within range**.

While citing the resolution regarding India's missile programme, China has, in contrast, been aiding the development of Pakistan's nuclear and missile programmes for decades, from providing enriched uranium and even technology for nuclear-capable missiles.

SINO - PAK

That cooperation has continued unabated and was officially acknowledged three years ago. **In 2018**, the state-backed **Chinese Academy of Sciences** announced it had **sold Pakistan a tracking system** to speed up development of multi-warhead missiles, a detail that the government chose to declassify.

Zheng Mengwei, a researcher with the CAS Institute of Optics and Electronics, told the Hong Kong-based South China Morning Post that Pakistan had purchased a "highly sophisticated, large-scale optical tracking and measurement system".

25 NORTH KOREA - TESTED RAIL-LAUNCHED BALLISTIC MISSILES

North Korea successfully launched ballistic missiles **from a train** for the first time and was continuing to bolster its defenses, after the two Koreas test-fired missiles hours apart in dueling displays of military might. The launches underscored a return of the tensions between the rivals amid a prolonged stalemate in U.S.-led talks aimed at stripping North Korea of its nuclear weapons programme.

Pyongyang's official Korean Central News Agency said the missiles were launched during a drill of a **'Railway-Borne Missile Regiment'** that transported the weapons system along rail tracks in the country's mountainous central region and accurately struck a sea target **800 kilometers** (500 miles) away.

A rail-based ballistic system reflects North Korea's efforts **to diversify** its launch systems, which now includes vehicles and ground launch pads and may eventually include submarines. **Firing a missile from a train** could add mobility since North Korea has a **railway network across the country**, but its simple rail networks could also become easy targets during a crisis.

The South Korean and Japanese militaries said earlier that North Korea's two short-range ballistic missiles landed inside Japan's **Exclusive Economic Zone** but outside its **Territorial Waters**. The last time a North Korean missile landed inside that zone was in October 2019.

In another weapons display over the weekend, the North said it tested new cruise missiles, which it intends to make nuclear-capable, that can strike targets **1,500 kilometers** (932 miles) away, a distance putting **all of Japan and U.S. military installations** there within reach.

The missiles, likely modeled on **Russia's Iskander Missiles**, are designed to fly at **Relatively Low Altitudes** where the air is dense enough to allow for maneuverability in flight, making interception by missile defense systems more difficult.

26 AUKUS HIGHLIGHTS INDIA'S OWN SUBMARINE DEVELOPMENT - EFFORTS & STATUS

What is Project 75I?

Australia's announcement to acquire nuclear-powered submarines under the tripartite arrangement with **the U.K. and the U.S. (AUKUS)** puts the spotlight on India's own submarine efforts, ongoing tender for **manufacturing six conventional submarines** with technology transfer under **Project-75I** and the indigenous programme to build six nuclear-powered attack submarines (SSN).

What is AUKUS?

What is Five Eyes Intelligence-Sharing Alliance?

AUKUS is a trilateral security pact between **Australia, the United Kingdom and the United States**, announced on 15 September 2021 for the Indo-Pacific region. Under the pact, the US and the UK will help Australia to acquire nuclear-powered submarines.

The pact also includes cooperation on

1. Cyber Capabilities
2. Artificial Intelligence
3. Quantum Technologies
4. Additional Undersea Capabilities.

Under the pact, Australia will acquire new long-range strike capabilities for its air force, navy and army. The pact will focus on military capability, separating it from the Five Eyes Intelligence-Sharing Alliance that also includes New Zealand and Canada.

However, both the conventional and nuclear-powered projects were delayed and the first vessel was at least a decade away while the Navy faced an urgent need to modernise its ageing submarine fleet, especially in the backdrop of increasing forays by the Chinese Navy into the Indian Ocean Region.

The Ministry of Defence (MoD) issued the **Request For proposal (RFP)** to the shortlisted Strategic Partners - the **Mazagaon Dock Shipbuilders Limited (MDL)** and **Larsen & Toubro (L&T)**. The contract, estimated to cost upwards of ₹ 43,000 crore, is being processed through the strategic partnership model of procurement and being the first project under it has added to the delays.

Current Status:

The Navy currently has **15 Conventional Submarines -**

1. Eight Russian Kilo class ones.
2. Four German HDWs
3. Three Scorpens and
4. Nuclear Ballistic Missile Submarine (SSBN) **INS Arihant**.

Second indigenous **SSBN Arighat**, now in advanced stages of sea trials, is expected to be commissioned next year along with indigenous aircraft carrier **Vikrant**, which recently began sea trials, the two officials remarked.

Akula class SSN Chakra, on a decade-long lease from Russia, has been returned recently, slightly ahead of schedule. India has already signed a deal for the lease of another such submarine and the project is underway. It is expected to be delivered in 2025, at least two officials disclosed. Given the delays, India is also considering leasing one more Akula class SSN, the officials pointed out, adding that discussions were still in the preliminary stage.

Russia has recently put forward a proposal to India to quickly supply three Kilo class submarines to arrest the falling numbers.

Submarine Midlife Upgrade:

Of the eight Kilo class submarines, except for **INS Sindhushashtra**, which was inducted in 2000, all **others were inducted between 1986 and 1991**. The **German HDWs** were inducted **between 1986 and 1994**. To keep them functional, the Navy has embarked on an extensive **midlife upgrade and refit programme** that adds another decade to the boats. "It is expensive but necessary," a defence official asserted.

In addition, **six Scorpens** are being built by MDL **Under Technology Transfer** from the Naval Group of France. Three have been inducted so far and the fourth one, **Vela**, is expected to be commissioned by year-end. The Navy has drawn up plans to install **Air Independent Propulsion (AIP)** modules on all Scorpens to enhance their endurance, as they go for their refit.

Under the AUKUS partnership unveiled on September 16, the first initiative is for Australia to acquire at least eight nuclear-powered submarines from the U.S. and the U.K. With it, Canberra has scrapped the plan to build 12 conventional submarines in partnership with Naval Group estimated at over AUS\$50bn when it was announced in 2016.

27

NASA SPLITS HUMAN SPACEFLIGHT - REFLECTING NEW ORBITAL ECONOMY

NASA is splitting its human spaceflight department into two separate bodies - one centered on big,

1. Future-Oriented Missions To The Moon And Mars.
2. The International Space Station and other operations closer to Earth.

The reorganization, announced by **NASA chief Bill Nelson**, reflects an evolving relationship between private companies, such as SpaceX, that have increasingly commercialized rocket travel and the federal agency that had exercised a U.S. monopoly over spaceflight for decades. Nelson said the shake-up was also spurred by a recent proliferation of flights and **commercial investment in Low-Earth Orbit** even as NASA steps up its development of deep-space aspirations.

NASA'S Human Exploration and Operations Mission

The move breaks up **NASA's Human Exploration and Operations Mission Directorate**, currently headed by Kathy Leuders, into two separate branches.

Leuders will keep her associate administrator title as head of the new Exploration Systems Development Mission Directorate, focusing on NASA's most ambitious, long-term programs, such as **plans to return astronauts to the moon under project Artemis, and eventual human exploration of Mars.**

His branch will primarily oversee more routine launch and spaceflight activities, including missions involving the space station and privatization of low-Earth orbit, as well as sustaining lunar operations once those have been established.

"This approach with two areas focused on human spaceflight allows one mission directorate to operate in space while the other builds future space systems," NASA said in a press release announcing the move.

The announcement came less than a week after SpaceX, which had already flown numerous astronaut missions and cargo payloads to the space station for NASA, launched the first all-civilian crew ever to reach orbit and returned them safely to Earth.

28 INDIA'S HIGHEST ALTITUDE INSTITUTE IN LADAKH GETS LIFI NETWORK FOR FASTER INTERNET

The Students' Educational and Cultural Movement of Ladakh (SECMOL) has become the first-of-its-kind institute in the Union Territory to have an internet connection using Light Fidelity (LiFi) technology.

LIGHT FIDELITY (LIFI) TECHNOLOGY

LiFi is a game-changing innovation that can transmit enormous amounts of data through LEDs (Light Emitting Diodes). An application of Visual Light Communications, LiFi was announced as the faster, more secure, and energy-efficient successor of today's WiFi, which can transmit data at speeds that are 100 multitudes faster.

LiFi means transmitting data with a light beam spectrum through open space in outdoor and indoor environments. LiFi systems provide ultra-fast data connections, and are especially useful in urban areas where radio spectra are congested and also very useful in rural areas wherein Fiber Optic Cables or networks are not reachable.

Where It All Started?

There wouldn't be LiFi if it weren't for **Alexander Graham Bell** and his discovery of **Visual Light Communications technology (VLC)**. Bell found out that visible light can be used for the transmission of data through one of his notable inventions, the Photophone.

Bell's Photophone

On February 19, 1880, Alexander Graham Bell and

his assistant **Charles Sumner Tainter** jointly invented the photophone. The photophone was a device that transmitted speech on a modulated beam of sunlight. By the 3rd of June 1880, Tainter was on the roof of the Franklin school and transmitted a wireless voice telephone message to Bell, who was in his laboratory that was 213 meters or 700 ft. apart from Tainter's location.

VLC's Infancy Stage

The most recent contemporary known work on VLC began in 2003 at Keio University, Japan by Nakagawa Laboratories. Their research on the technology concentrated on the transmission of data by visible light through the use of LEDs.

The researchers simulated an indoor communication system that would use lighting as a transmission medium. They saw the potential of VLC, and with their further research efforts and 6 years later they were able to produce a fast communication system that peaked at 100 Mbit/s.

The Birth of LiFi

VLC concerns all communications technologies that use visible light. **LiFi is an application of VLC** and

makes use of its **very basic principle of using light as a medium**, but differs with the use of a two-way network protocol to provide network connectivity at incredible speed. Most of the research and studies into LiFi was headed by Prof. Harald Haas and his team of researchers.

The Man Behind LiFi

Li-fi is the brainchild of a professor at the University of Edinburgh, **Harold Haas**, and his team of researchers. They have been researching VLC way back to the year 2006 and focused on the use of light for two-way data transmission, which then led to the creation of LiFi technology.

The term Light Fidelity (LiFi), similar to Wireless Fidelity, (WiFi) was coined during Haas' TED Talk named "**Wireless Data from Every Light Bulb**" in 2011. During his talk, he showed the technological innovation and capabilities of LiFi with just a 3\$ off-the-shelf LED bulb that streamed a high-definition video that even paused when he put his hand below the light and above the LiFi photodetector, wowing his audience.

Prof. Haas helped establish PureVLC, which would then launch LiFi technology for the public market in 2012. The company was later renamed PureLiFi and was an Original Equipment manufacturer that commercialized LiFi products for its integration with existing LED-lighting systems.

Since **LiFi utilizes the visible light spectrum**, a spectrum **that is 10,000 times larger than the radio bandwidths that WiFi uses**, that would eventually become crowded and slower when large amounts of data are transferred. LiFi can deliver unadulterated speed and consistent large amounts of data with any LED light source, which makes LiFi the equalizer in the exponentially growing data world.

How it Works?

For a LiFi system to work, the driver-circuit in the LED bulbs encodes data and transmits it by switching the LED on and off at rates that are indiscernible to human perception, and is then decoded by an optical sensor on a laptop or phone that receives the data. Although the system requires the LEDs to be on, it is possible to change the light intensity that isn't visible to the human eye yet enough light to still transmit data. Even though

it uses energy, the combination of the transfer of light and data also makes LiFi an efficient and sustainable solution.

The LiFi Consortium

In 2011, industry leaders from North America, Europe, and Asia came together to create a group known as the **LiFi Consortium**. Founded by Fraunhofer IPMS of **Germany**, IBSEN telecom of **Norway**, Supreme Architecture of **Israel** and the USA and **TriLumina** from the USA. The group aimed to further enhance and promote different **Optical Wireless Communication (OWC)** technology, being not limited to LiFi, the group pushes for the improvement of all forms of OWC, LiFi and fiber optics among others.

Li-Fi Recent Developments

1. LiFi has improved throughout the years. In August 2013, LiFi systems were able to show data rates of over 1.6 Gbit/s.
2. In September 2013 of the same year, a press release announced that LiFi or VLC system does not require line-of-sight conditions to dissuade the large concerns about LiFi systems for communication that they require line-of-sight.
3. In October, 2013 Chinese manufacturers and lead scientist Chi Nan worked on LiFi development kits. Their researchers say that data speeds of up to 150 Mbps were possible through **the use of microchipped bulbs**. They acknowledged that LiFi's success as a commercial technology would rely on vital pieces of technology such as light communication controls, microchip design, and manufacturing.
4. In April 2014, Stins Coman, a Russian company announced the development of **BeamCaster**, LiFi local network with a capacity of transferring 1.25 Gbit/s of data. They're optimistically forecasting of boosting speeds up to 5Gbit/s soon.
5. In March 2017, Professor Haas and his team of researchers have further set the bar high for LiFi with their discovery of **Micro-sized Gallium Nitride (GaN)** micro LEDs as strong candidates for VLC and LiFi because of their high bandwidths. Their demonstration produced a record speed transmission rate of 11.95 Gbit/s which was achieved with a violet micro-LED. It is their

response to the increasing demands of the world's communication services, wherein they expect that the overall number of networked devices would reach 26.3 billion by 2020.

6. In 2019, PureLifi has shifted its focus to improving the LiFi specific components that could be integrated into next-generation smartphones and other networked devices.

7. In March of the same year, PureLifi demonstrated its dominance in the field using a modified laptop with a 1Gbit/s LiFi system. PureLifi's CEO Alistair Banham said that there are around 189 deployments of the firm's technology around the globe, and that it's working with a variety of clients, that include **smartphone firms** and **major lighting companies** who see great potential in LiFi, such as Lucibel, Zumtobel, and the former Philips Lighting, Signify.

Ahmedabad-based Nav Wireless Technologies Pvt Ltd has set up a LiFi network at **India's highest altitude educational organisation** to help the local education fraternity, the company said in a statement here.

With this LiFi setup, it said the faculties and students would get faster and safer internet connections over the existing electric power lines for various educational purposes.

Nav Wireless Technologies is the only registered company in **the LiFi sector in Asia**. Elaborating on the motive behind the project, CTO of Nav Wireless Technologies Hardik Soni said, "We had approached the institute authorities for this project and they were highly impressed with such an innovative idea to provide faster, safer, and cheaper internet.

29 GERMAN AUTO GIANTS PLACE THEIR BETS ON HYDROGEN CARS

Battery power may be the front runner to become the car technology of the future, but don't rule out the underdog hydrogen. That's the view of some major automakers, including BMW and Audi, which are developing hydrogen fuel-cell passenger vehicle prototypes alongside their fleets of battery cars as part of preparations to abandon fossil fuels.

Hydrogen Cars

What is a fuel cell electric vehicle?

FCEVs use a propulsion system similar to that of electric vehicles, where energy stored as hydrogen is converted to electricity by the fuel cell. Unlike conventional internal combustion engine vehicles, these vehicles produce no harmful tailpipe emissions.

FCEVs are fueled with pure **hydrogen gas stored in a tank** on the vehicle. Similar to conventional internal combustion engine vehicles, they can fuel in **less than 4 minutes** and have a driving range over 300 miles. FCEVs are equipped with other advanced technologies to increase efficiency, such as regenerative braking systems that capture the energy lost during braking and store it in a battery. Major automobile manufacturers are offering a limited but growing number of production FCEVs to the public in certain markets, in sync with what the developing infrastructure can support.

How Fuel Cells Work

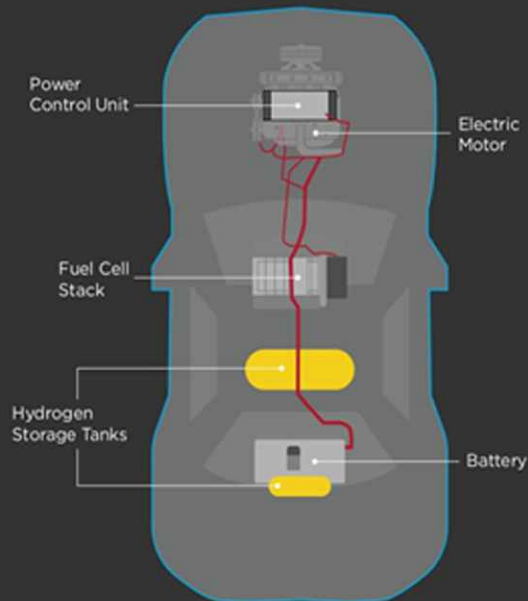
The most common type of fuel cell for vehicle applications is the **Polymer Electrolyte Membrane (PEM)** fuel cell. In a PEM fuel cell, an electrolyte membrane is sandwiched between a positive electrode (cathode) and a negative electrode (anode). Hydrogen is introduced to the anode, and oxygen (from air) is introduced to the cathode. The hydrogen molecules break apart into protons and electrons due to an electrochemical reaction in the fuel cell catalyst. Protons then travel through the membrane to the cathode.

The electrons are forced to travel through an external circuit to perform work (providing power to the electric car) then recombine with the protons on the cathode side where the protons, electrons, and oxygen molecules combine to form water.

The Fuel Cell Electric Vehicle (FCEV)

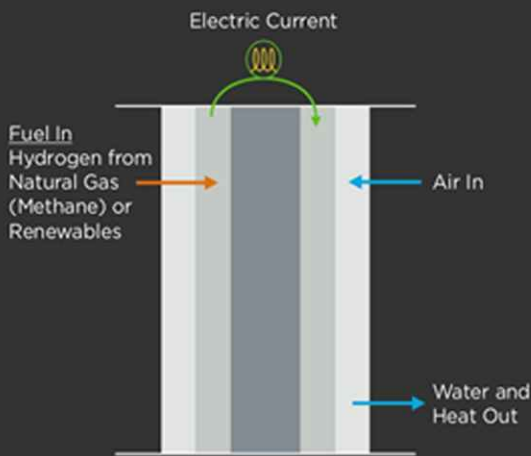
FCEVs are available now in southern California and coming soon to a neighborhood near you.

Hydrogen FCEV System



FCEVs generate electricity via the chemical reaction of combining hydrogen and oxygen into water.

Hydrogen Fuel Cell



Reduces Greenhouse Gas Emissions



Refuels Rapidly

taking only a few minutes and using familiar technology

Can travel 300 Miles between refills



Emits Only Water from the tailpipe

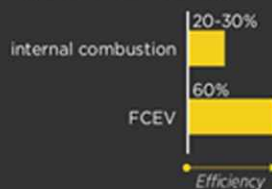


Uses Domestic Fuel



- natural gas
- water (electrolysis)
- biomass
- waste products

Operates Efficiently



Runs Quietly

even at highway speeds, since there are no mechanical gears or combustion



Scales Up Easily

as fuel cells can be added to the stack to increase power



U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy
FUEL CELL TECHNOLOGIES OFFICE

Global auto hub Germany is in sharp focus. It is already betting billions on hydrogen fuel in sectors like steel and chemicals to meet climate targets, and closely-fought elections this month could see the Greens enter the coalition government and further push the technology.

BMW is hydrogen's biggest proponent among Germany's carmakers, charting a path to a mass-market model around 2030. The company also has one eye on shifting hydrogen policies in Europe and in **China, the world's largest car market.**

30 AVOID SHIFTING GOALPOSTS ON BORDER DISPUTE, INDIAN ENVOY TELLS CHINA

India's envoy to China has called on Beijing to “**avoid shifting goalposts**” by blurring the immediate challenge of managing disputed border areas with the longer term negotiations to resolve the boundary dispute, saying both sides needed to follow past agreements and pursue both objectives on parallel tracks.

Underlining the obstacles that India-China relations currently face, Ambassador to China Vikram Misri said, “The first is to avoid shifting goalposts.” He was speaking at a Track Two dialogue held by Indian and Chinese institutes last week and the transcript was made available by the Indian Embassy in Beijing .

Mr. Misri said both sides continued to have conversations about resolving the crisis on the Line of Actual Control, and following disengagement at **Galwan Valley, the north and south banks of Pangong Lake**, and most recently at Gogra last month, were now taking up remaining friction areas.

Well-understood Distinction

“For long, the Indian and Chinese sides have adhered to a well-understood distinction between resolving the boundary question and managing border affairs,” he said.

“The 1988 understanding between our leaders was precisely for keeping the resolution of the boundary question on a track separate yet parallel to the bilateral relationship, with maintenance of peace and tranquility as the prerequisite. **The Special Representatives mechanism, the Agreement on Political Parameters and Guiding Principles of 2005** and the three-phase framework were all designed to work on the boundary question, which we agreed was a complex and sensitive issue requiring time to work through.”

“On the other hand,” he said, “for managing border affairs on a daily basis, we evolved a mechanism, consisting of instruments such as the **WMCC [Working Mechanism for Consultation and Coordination on border affairs]** and a succession of agreements, protocols and CBMs, to govern behaviour on the ground and ensure peace and tranquility. A serious violation of peace and tranquility in the border areas naturally requires us to apply our minds on the basis of established agreements, protocols and mechanisms to resolve it. As we do so, any attempt to confuse border affairs with the boundary question is a disservice to the work of those involved in finding solutions.”

Differing Claims To LAC

Chinese officials in statements have justified Beijing's mobilising of thousands of troops along the LAC last summer by citing China's territorial claims, including to the Galwan Valley, and accusing India of infringing on those claims. Indian officials have said China's unilateral actions went against the **four border agreements that govern the behaviour of troops in disputed areas**.

Mr. Misri called on both sides to address the other's sensitivities. “It cannot be that only one side's concerns are of relevance while the other side's case goes unheard. Safeguarding territorial integrity and national security holds equal value for both sides. Affixing blame exclusively on the other side is not a helpful approach.” He said both had space to cooperate on issues including tackling the pandemic, concerns about terrorism in the region and the situation in Afghanistan.

31 AUSTRALIA TO PROVIDE \$180 MILLION IN GRANTS TO PROMOTE CARBON CAPTURE

Australia said it would step up grant funding for hydrogen projects to boost clean energy output, a response to international pressure to set more ambitious **carbon emissions reduction** targets for 2030.

Prime Minister Scott Morrison said the government would provide an extra A\$150 million (\$108 million), increasing grants to A\$464 million for feasibility studies and the construction of hydrogen projects in seven hubs around the country.

"We are accelerating the development of our Australian hydrogen industry and it is our ambition to produce the cheapest clean hydrogen in the world, transforming our transport, energy, resources and manufacturing sectors," Mr. Morrison said in a joint statement with Energy Minister Angus Taylor.

The announcement came as Mr. Morrison headed to **Washington** for "**Quad**" talks with U.S. President Joe Biden, Japanese Prime Minister Yoshihide Suga and Prime Minister Narendra Modi, with climate policy on the agenda.

The conservative government has resisted international pressure to commit to **A NET ZERO CARBON TARGET for 2050** or deeper cuts than a plan to reduce emissions by 26% to 28% by 2030 from 2005 levels ahead of a United Nations climate summit in November.

Instead it has committed to spend A\$18 billion over 10 years on a range of technology to help cut emissions, such as hydrogen, energy storage and carbon capture and storage.

The grants for hydrogen projects add to A\$1.2 billion the government has allocated towards investing in hydrogen, including low-cost financing, **aiming to drive down the cost of hydrogen production to less than A\$2 per kg.**

Germany, in comparison, has committed to investing more than 8 billion euros (\$9 billion) to fund large-scale hydrogen projects. Australia will now have seven hydrogen hubs, up from five, across the country, including in key coal-producing regions in New South Wales and Victoria.

32 NASA'S LUCY MISSION -PROBE JUPITER'S TROJAN ASTEROIDS

NASA is poised to send its first spacecraft to study Jupiter's Trojan asteroids to glean new insights into the solar system's formation 4.5 billion years ago, the space agency.

Lucky Mission?

The probe, called Lucy after an ancient fossil that provided insights into the evolution of human species, will launch from Cape Canaveral Space Force Station in Florida. Its **mission is to investigate the group of rocky bodies** circling the Sun in two swarms, one preceding Jupiter in its orbital path and the other trailing behind it. After receiving boosts from Earth's gravity, Lucy will embark on a **12-year journey to eight different asteroids** - one in the **Main Belt between Mars and Jupiter** and then **seven Trojans**.

"Despite the fact that they really are in a very small region of space, they're very physically different from one another," Hal Levison, the mission's principal scientist told reporters, about the Trojan asteroids, which number more than 7,000 in total. "For example, they have **very different colors**, some are **grey**, some are **red**," he added, with the differences indicating how far away from the Sun they might have formed before assuming their present trajectory.

"Whatever Lucy finds will give us vital clues about the formation of our solar system," added Lori Glaze, director of NASA's planetary science division.

Lucy will fly by its target objects **within 250 miles** (400 kilometers) of their surfaces, and use its onboard instruments and large antenna to investigate their geology, including composition, mass, density and volume.

The ship was **built by Lockheed Martin** and includes over two miles of wire and solar panels that, placed end-to-end, would be as tall as a five-story building. It will be the first solar-powered to venture this far from the Sun, and will observe more asteroids than any other spacecraft before it. The total mission cost is \$981 million. The researchers who discovered **Lucy the fossil in Ethiopia in 1974** named her after the **Beatles' song "Lucy in the Sky with Diamonds"** which they were playing loudly at the expedition camp.

In a nod to this heritage, **the official logo** of the NASA mission is **Diamond Shaped**.

1 SCALED-DOWN DASARA IN MYSURU THIS TIME TOO

In the wake of COVID-19 pandemic, the **world-famous** 10-day **Dasara celebrations** will be held in **Mysuru** in a simple and traditional way from October 7, 2021.

Activities such as film festival, adventure sports, food mela, exhibitions, Yuva Dasara, and torchlight parade usually held during the celebrations will not be held this time too. These programmes were not held last year as well owing to the pandemic.

Chief Minister Basavaraj Bommai, who presided over a meeting of the Dasara High-Powered Committee, said ₹6 crore would be released for holding the festivities in **Mysuru, Srirangapatna, and Chamarajanagar**.

All traditional events, including inauguration at **Chamundi Hills**, will be held by ensuring social distancing, while the world famous **JAMBOO SAVARI** (procession of caparisoned elephants) would be restricted to the palace premises.

History

The Dasara festivities began with the Vijayanagar kings as early as the 14th-15th Century. The festival played a historical role in the **14th-century Vijayanagara Empire**, where it was called **Mahanavami** and the festivities are shown in the relief artwork of the outer wall of the **Hazara Rama temple of Hampi**.

The **Italian Traveller Niccolò de' Conti** described the festival's intensity and importance as a grandeur religious and martial event with royal support. The event revered Durga as the warrior goddess (some texts refer to her as Chamundeshwari). The celebrations hosted athletic competitions, singing and dancing, fireworks, a pageantry military parade and charitable giving to the public.

After the fall of the **Vijayanagar to Deccan Sultanates**, these Hindu celebrations came to an end under Muslim rulers. The Wodeyars of Mysore formed a kingdom in Southern parts of the Vijayanagara Empire and continued the Mahanavami (Dasara) festival celebration, a tradition started initially by **Raja Wodeyar I** (1578-1617 CE) in mid September 1610 at Srirangapatna.

What is the meaning of Jambu Savari?

In Mysore, India, the **Vijayadashami Elephant procession** during Mysore Dasara is called Jumbo Savari (from the British during their control of Mysore State). The original name to this procession is Jumbi Savari ("going to the Shami (Banni) tree"). Now Goddess Chamundeshwari is taken in procession on an Elephant.

Where does celebrate world famous procession the Jambusawari?

The Jumbo Savari (Mysore Dasara Procession) is held **on the streets of Mysore city on Vijayadashami**. It starts from the Mysore Palace and culminates at a place called **Bannimantap**.

Why is Mysore Dussehra famous?

In Mysuru, Dussehra **marks the victory of Goddess Durga over the devil, Mahishasur**. Thus, this festival is celebrated to honour the Goddess in her warrior form. The idol of Chamundeshwari is worshipped in the Mysore Palace by the royal couple before the Jambu Savari.

2 101ST CONVOCATION OF UNIVERSITY OF MYSORE ON SEPTEMBER 7

The university had actually planned the convocation in March or April 2021, but the devastating second wave of the COVID-19 pandemic disrupted its plans.

In 2020, the university successfully conducted its **historic 100th convocation**, which was virtually addressed by **Prime Minister Narendra Modi**. The pandemic had also delayed the 100th convocation, which was finally organised on October 19, 2020, after taking all the safety precautions. The university has made all the necessary preparations for the 101st convocation.

3 MONSOON MUSIC FEST 'BARKHA RITU'

'**Barkha Ritu**', the monsoon **music festival** of the Mumbai-based cultural organisation Banyan Tree Events, will return to Bengaluru. This year also marks the event's 20th edition.

'Barkha Ritu', a festival featuring monsoon ragas, travels across eight cities: Mumbai, Bengaluru, Pune, Hyderabad, Chennai, Delhi, Ahmedabad, and Kolkata.

This concert will feature performances by **violinist R Kumaresh**, slide **guitarist Debashish Bhattacharya** and **vocalist Pt. Venkatesh Kumar**.

4 CELEBRATIONS FOR V.O.C'S 150TH BIRTH ANNIVERSARY

Tamil Nadu made 14 announcements in the State Legislative Assembly in line with his Independence Day speech that the **150th birth anniversary of freedom fighter V.O. Chidambaranar** would be celebrated as a government function.

Responding to legislator E.R. Eswaran's (Tiruchengodu) query on whether the government would celebrate the freedom fighter's 150th birth anniversary, Mr. Stalin said a bust of V.O.C. would be unveiled at Gandhi Mandapam in Chennai. Mela Periya Cotton Salai, an arterial road in Thoothukudi city would be renamed **V.O.C. Road**, he said.

Valliyappan Olaganathan Chidambaram Pillai (5 September 1872 - 18 November 1936), also known as **Kappalottiya Tamizhan** ('Tamil Helmsman'), was an Indian freedom fighter and former leader of the Indian National Congress. He founded the **Swadeshi Steam Navigation Company** in 1906 to compete against the monopoly of the British India Steam Navigation Company (BISNC). He launched the **First Indigenous Indian Shipping Service** between **Tuticorin (India) and Colombo (Sri Lanka)** with the Swadeshi Steam Navigation Company (SSNC), competing against British ships. **Tuticorin Port Trust, one of India's thirteen major ports, is named after him.** At one time a member of the Indian National Congress, he was later charged with sedition by the British government

and sentenced to life imprisonment, and his barrister license was revoked.

Arrest and Imprisonment

V. O. C. yoked oil press kept now at Gandhi Mandapam Guindy

By 1908, Chidambaram's political involvement drew the attention of the British. Hearing of his intention to speak at a rally celebrating the release of Bengali leader **Bipin Chandra Pal**, Winch, a British official invited Chidambaram to meet him in Thirunelveli with his political comrade **Subramanya Siva**. At the meeting, Winch expressed concern about Chidambaram's activities and asked him to give assurances that he would not participate in any political revolt.

Chidambaram refused to accept his conditions, so he and Siva were arrested on 12 March 1908.

The arrest was followed by widespread protest. In Thirunelveli shops, schools and colleges were closed in protest, and rioting broke out. The Thirunelveli municipal office, post offices, police stations and municipal courts were attacked. **Subramanya Bharathi and Subramanya Siva** also appeared in the court for questioning for the case instituted against Chidambaram. He was charged under sections 123-A and 153-A of the **Indian Penal Code** for speaking against the British and giving shelter to Siva. Chidambaram refused to take part in the proceedings.

He was charged with sedition, and a sentence of two life imprisonments (in effect forty years) was imposed. He was confined in the Central Prison, Coimbatore from 9 July 1908 to 1 December 1910.

The judgement was widely condemned in the popular press, with even the British Statesmen magazine claiming that it was unjust. Chidambaram appealed the sentence in High Court, gaining a reduced punishment of **four years imprisonment and six years in exile**. An appeal to the Privy Council led to a further reduction in sentence.

Chidambaram was interned in Coimbatore and Kannanoor jail. He was not treated as a political prisoner, nor was the sentence de facto of simple imprisonment; rather, he was treated as a convict sentenced to life imprisonment and required to do hard labour, which caused his health to suffer.

To his dismay, the Swadeshi Steam Navigation Company had already been liquidated in 1911, and the ships were auctioned to their competitors. The company's first ship, the **SS Gallia**, was **sold to the British Shipping Company**.

An annual **Kappalottiya Thamizhan V.O.C. Award** would be awarded to a Tamil, who has excelled in ship-building and related technology. A cash prize of ₹5 lakh and a citation would be part of the award, the CM said. V.O.C.'s death anniversary **on November 18** would be observed as a **'Day of Sacrifice.'**

A full-size statue of V.O.C. would be installed in V.O. Chidambaranar Park in Coimbatore, where he **had spent several days in prison**. An audio-visual display would be arranged at V.O.C.'s house in **Ottapidaram** and his **manimandapam** would be renovated.

A **Research Chair** would be set up at the **Manonmaniam Sundaranar University** in Tirunelveli district, the CM said.

5 LOKAME THARAVADU': BIRTHING AN ART ECOSYSTEM IN KERALA

270 artists. 3,000 artworks. 600,000 sq. ft. of display space spread across 3 sq km. And this does not include the 11,000 sq. ft. **Durbar Hall in Kochi**. If there's one thing the ongoing Lokame Tharavadu art show in **Kerala's Alappuzha town** has in spades, it's ambition. Matching and possibly surpassing the Kochi Biennale at least in scale, this brainchild of **artist Bose Krishnamachari**, who is also the president of the Kochi Biennale Foundation (KBF), had a rather unfortunate birth. Like everyone else, Bose underestimated the pandemic and scheduled the show's opening for April this year, only to be rebuffed rudely by the second wave. Now, the show is back, with extended dates, renewed vigour and sanitiser galore.

Sometime in September 2020, Bose had wanted KBF to cobble together something to support Kerala's artists - "it was important to give them confidence" - and the Board asked him to pick up the gauntlet. The artist took it on. "Unpredictability is beautiful," he says. "I was up for it." Existing travel restrictions initially confined focus to Kerala-resident artists, but soon Bose expanded it into a Malayali-only collection, with artworks shipped in from Paris, Dubai, Delhi, etc. For local artists, Bose scoured the State, from Kasaragod to Thiruvananthapuram, visiting homes and studios over two months. "I found artists who had never shown anywhere," he says. As the discoveries mounted, the modest idea soon morphed into its present mammoth

shape. For almost a year now, the Mumbai-based Bose has been stationed in Alappuzha, in a rented flat run over by artists and volunteers and one chechi feeding them all.

Canal city's riches

This collocation is not providential - Bose had the nous to plug into the ongoing **Alappuzha Heritage Project**, under which Kerala's tourism ministry is restoring and conserving the town's old buildings and converting many of them into museums. "The idea is to make Alappuzha a rich heritage town," Isaac tells me, and "working with this art project is in line with that."

The government has promised ₹2 crore to the roughly ₹4.5 crore **Lokame Tharavadu** budget, Bose sold some of his pieces to raise money, sponsors were found for painting, lighting, landscaping works, and various private donors chipped in. Given that Lokame Tharavadu translates into '**The world is one family**', there is some discomfort in the hint of parochialism inherent in any collection driven by regional identity, although Bose says the idea was driven more by practical considerations.

6

EMPIRELAND: HOW IMPERIALISM SHAPED MODERN BRITAIN' REVIEW

Some years ago in **Athens**, a conversation with a staffer at **the Acropolis Museum**. Thanks to my ignorance, I asked her where I could see the **Parthenon Marbles**. The affable woman turned terse. "If you want to see them, take a plane to London," she said and turned away. It later struck me that her advice would hold good for some of the most prized cultural relics from Asia and Africa. Most were stolen, and can be found today in British museums.

Colonial plunder may have happened in the past, but in the absence of restitution, it remains an active element of the present. The British Museum and the Louvre in Paris, to mention just two institutions, continue to earn millions of tourist dollars and cultural capital from stolen treasures. In August 1999, "**the African World Reparations and Repatriation Truth Commission** suggested \$777 trillion as a suitable sum for reparations paid as compensation for lives lost during the African slave trade and the gold, diamonds and other resources stolen from the continent during colonisation," notes **Sathnam Sanghera** in his new book, **Empireland: How Imperialism Has Shaped Modern Britain**.

Multi-layered history

But Empireland is much more than an accounting of the losses and gains accrued from Empire. Sanghera blends memoir, journalism and history to construct a multi-layered narrative that slowly builds toward an existential but also political question: if you take away Empire, and everything connected to it, what would be left of the elements that could be said to constitute British national identity? What is British identity minus Empire?

Let's try some of the answers. What about the quintessential English institution, the country home? It turns out that nearly one-third of British country homes and gardens were built on wealth earned from slavery or colonial loot. "If you accumulated significant amounts of money, country houses were the favoured asset through which to launder colonial booty," notes Sanghera.

What about Britain's role in abolishing slavery, something Brits take pride in? Well, the compensation paid to slave owners for giving up profits from slavery (while no compensation was paid to the slaves) was practically the seed money for some of the biggest fortunes in British finance and industry. From Lloyds, Barclays and RBS, among the banks, to Alfred Waterhouse (founder of what would become PricewaterhouseCoopers), William Welch Deloitte (grandson of a West Indies planter), the British.

Artist **Harsimran Juneja** is drawn to the colour yellow. He has done about 60 paintings exclusively in yellow and would probably do more. The colour, he says, is the balance between sadness and hope - a medium through which he explores the "greys" of life. "I don't think I'll get out of this any

One of his striking works in the monochromatic series depicts a panda with a cow's face beside a shredder. The 30 x 60-inch work in mixed media (emulsions, acrylic, oil sticks on canvas) is a take on the need to shed the insecurities we have created for ourselves. The series comes under the larger title, 'Animal Confessions', which are observations of life in a complex social milieu.

He draws inspiration from American artist **Jean-Michel Basquiat**, whose raw and primitive style resonates with Harsimran's sensibilities. He is also moved by the works of Pop Artist **Andy Warhol** and Japanese Contemporary Artist **Yayoi Kusama**. "However, my art practice is a journey to find my own voice," he says.

Patricia Tusa Fels waited out the pandemic working on the final edits of her book, **Monsoon Mosques: Arrival of Islam and the Development of a Mosque Vernacular** (₹1,416, 2021). As the health crisis engulfed the world, the conservation architect moved, in 2019, to Uzbekistan on a grant and later travelled to Italy. In 2021 the book was published and released by Mapin Publishing.

An in-depth study on a building style of the mosques of South East Asia - **Malaysia, Java Sumatra and Indonesia**, the book speaks of an architecture that responds to local climate and materials available. It is also peppered with fascinating tales of the early life and times of the countries.

Patricia lived in Kochi with her husband Don Fels, a visual artist, from 2005 onwards when she explored the vernacular architecture of some of the early mosques of the city. It resulted in *Mosques of Cochin* (2011). For two years from 2013, she made several trips to Java, Sumatra and Malaysia, to research the mosques of the region.

How much of the pre-Islamic architecture remains?

The early mosques of **Kerala, Sumatra, Malaysia and Java** are a continuation of vernacular forms of the region. Kerala mosques, built by locals, used many of the same techniques as the pre-existing religious structures. Most were built from scratch, raised up by the locals to provide a place for prayer. Because Islam requires a large gathering space, the local vernacular was expanded to create an interior space grand enough to hold the mosque community.

In Sumatra and Malaysia, the mosque is a direct descendent of the gathering space used by Malay people. Early wooden structures had the same peaked pyramid roof and post-and-beam structure. To mark its importance, the people added more peaks, creating multi-tiered roofs, most with three tiers but some up to five!

In Java, many mosques were funded by royalty, a practice not found in Sumatra and Malaysia. As the royalty embraced Islam, they built mosques not only in their capitals, but in the outlying areas. As in Sumatra, the **multi-tiered timber roof dominates** the structure. The Javanese had a sophisticated system of pavilion building. These open-air timber-supported and roofed spaces were the location of local gatherings, royal celebrations and religious events. Some of the Javanese mosques are built on ancient brick Hindu or Buddhist monuments.

The mosque in Kozhikode visited by famous traveller Ibn Batuta

In **1341**, **Ibn Battuta** visited many of the mosques I visited in the 21st century. **Kozhikode, then Calicut, was a thriving trading centre** when Ibn Battuta arrived and noted an “atmosphere of peaceful coexistence and mutual tolerance between Hindus and Muslims...”

Today, these mosques still stand, in the Kuttichira neighborhood. **Kuttichira** is a lovely area, centered on the large tank/water body (chira), the adjacent **Mithqal Palli** and a historic market area. Lanes radiate out from the tank, connecting large multi-family homes that are in themselves of huge importance in telling the stories of the community. With the help of local friends I was able to visit many of these homes, called tharavadu , and talk to the families.

9 KUKI TRIBAL MILITANT LEADER KILLED

A **Kuki tribal** militant leader identified as **Letingthang Haokip**, commander-in-chief of the proscribed Socialist Democratic Front of Kukiland, was killed in a fierce encounter in **Churachandpur district**.

Police sources said that based on specific information received about the presence of some armed militants, a combined team of 46 Assam Rifles personnel and personnel of Churachandpur district police headquarters rushed to the spot around midnight.

Police said this Kuki outfit **is not a signatory to the Suspension of Operations (SoO)** with the government. Refusing to sign the SoO, they have been at large all these years. Police said that when the personnel of the combined team reached the outskirts of **Khominthing village**, the militants who had taken forced shelter there started opening fire towards the team.

After the exchange of fire, the personnel found the body of the commander-in-chief. Further, they identified Lungkhosei Chongloi, the bodyguard of the commander-in-chief, who was grievously wounded. He was rushed to J. N. Institute of Medical Sciences, **Imphal**, for treatment. Hospital sources said that his injuries are worrisome. He is reported to be from Saikul in **Sadar Hills**.

10 INDIGENOUS TOUCH TO NATIONAL ANTHEM IN MEGHALAYA

The Meghalaya Assembly has given an indigenous touch to the **National Anthem** ahead of **the 50th anniversary of Meghalaya’s Statehood in 2022**.

Speaker Metbah Lyngdoh had thought of giving ‘Jana Gana Mana’ a local flavour more than six months ago. The National Anthem sung by non-Hindi speakers to the accompaniment of folk instruments would underline the diversity of the country, he felt.

He found in the Shillong-based **Lamphang Syiemlieh** a musician who could undertake the project. The latter made sure there was no legal or constitutional bar on improvising the National Anthem.

The improvised National Anthem was played on September 10, the first day of the autumn session of the **60-member Meghalaya Assembly**.

“We wanted the National Anthem to have a distinct ring ahead of the golden jubilee of our Statehood. The outcome of the project was up to the expectations - a different sound to the same lyrics and the original tune,” Mr. Lyngdoh told The Hindu .

Mr. Syiemlieh had tried to have singers from the three regions - **Khasi Hills, Jaintia Hills and Garo Hills** - of Meghalaya. But he could not find any vocalist from the Garo Hills because of the COVID-19 situation.

He is one of the 10 vocalists who rendered the anthem. The others include **Evanisha Pathaw and Kheĩñkor Myllemngap**, known for their flawless Hindi accent.

The traditional instruments used include the 'bom', a single-headed large kettledrum played by Banshai Mukhim, the **two-string 'dutar'** played by Haniel Reuel Kharlukhi, the **'ksing'**, a percussion instrument played by Franky Myllemngap and **'chigring'**, a bamboo stump with strings played by Phrangsnghi Wahlang.

11 ICONIC CHERAMAN MASJID, INDIA'S OLDEST, GETS A MAKEOVER

The **Cheraman Juma Masjid** at Kodungalloor, **the oldest mosque in the Indian subcontinent that dates back to 629 AD**, and the **Holy Cross Church at Chendamangalam** built by Jesuit priests in **1577 AD**, both of which were renovated under the Muziris Heritage Project, are getting ready to be opened to the public.

A completion report on their renovation has been submitted to the government to be included in the list of projects under the Chief Minister's 100-day action plan.

On the renovation and conservation work worth ₹1.14 crore done on the historic mosque, he said the concrete structure that was added to the **mosque in 1974** was demolished and the mosque rebuilt in its old style, as a two-tier structure whose tiled roof was supported by teakwood frames. This is in addition to the **Islamic Heritage Museum** that was established at a cost of over ₹1 crore. Another ₹65 lakh was allotted for its refurbishment. This is apart from heritage funds that were used for research and digitalisation of old documents and archiving them.

What is PRASAD Project?

Another ₹10 crore worth Central tourism funds are expected under the **National Mission on Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASAD)** project, using which landscaping, lighting, and a facilitation centre will be readied, apart from rejuvenating a pond in the vicinity.

A tablet that dates back to the 16th century and the location of the oldest printing press in Kerala nearby add to its heritage value. A total of 30 monuments on the North Paravur-Kodungalloor stretch are being conserved under the Muziris Heritage Project.

12 SAFDARJUNG TOMB NEEDS URGENT CARE FROM WEEDS

Weeds growing on the dome of **Safdarjung Tomb** had damaged the monument which required urgent care from the **Archaeological Survey of India (ASI)**, historian **S. Irfan Habib** said .

The **18th Century monument** taken earlier, Mr. Habib said in a tweet the "dome has developed cracks, with weeds growing all over it". Later he told The Hindu that the ASI had neglected several monuments. He said weeds tended to grow during the monsoon but it was vital to clear them soon as they could lead to cracks.

The spokesperson said repair and conservation work at the monument was ongoing in 2019-2020, but was stopped due to the lockdown and shortage of workers caused by the pandemic.

13 NATIONAL MUSEUM TO OPEN BUDDHA GALLERIES SOON

The **National Museum's** extensive collections are set to be displayed in new locations in the city, with galleries on Buddhist art expected to be opened by Jan 2022 and work on museums of arms and armour, Freedom struggle and Jammu and Kashmir underway at the Red Fort.

The **Buddhist galleries**, located in the **Archaeological Survey of India's** former offices next to the **National Museum**, were set to be opened within a week or two, a National Museum source said .

The **National Museum building on Janpath** is among the buildings proposed to be demolished as part of the Central Vista redevelopment project and the museum itself moved to the North and South Block. However, the plans for these projects and timelines have not been announced.

In addition, the **gallery on the Freedom struggle from 1857** onwards was being developed by the **National Museum** at the Red Fort and would take about four to five months to complete. The Jammu and Kashmir museum was also being developed by the National Museum, the source added.

In a reply to the **Lok Sabha** in August, Culture Minister G. Kishan Reddy said the museum on **Buddha** was being “developed in a renovated century-old majestic building and spread over an area of about 15,000 square feet, surrounded by a lush green landscape”. He added it was a first-of-its-kind museum on Buddha and would include over 200 objects dating back to the **1st Century CE**.

14 U.S. - MASS EXPULSION OF HAITIAN MIGRANTS FROM TEXAS

The U.S. is flying Haitians camped in a Texas border town back to their homeland and blocking others from crossing the **border from Mexico** in a massive show of force that signals the beginning of what could be one of America’s swiftest, large-scale expulsions of migrants or refugees in decades. More than 320 migrants arrived in **Port-au-Prince** on three flights . In all, U.S. authorities moved to expel many of the 12,000 migrants camped around a bridge in **Del Rio, Texas**, after crossing from **Ciudad Acuña, Mexico**.

The U.S. plans to begin seven expulsion flights daily from four to Port-au-Prince and three to **Cap-Haitien**, according to a U.S. official who was not authorized to discuss the matter publicly. Flights will continue to depart from San Antonio but authorities may add El Paso, the official said.

Central Americans have also crossed the border in comparable numbers without being subject to mass expulsion, although Mexico has agreed to accept them from the U.S. under pandemic-related authority in effect since March 2020. Mexico does not accept expelled Haitians or people of other nationalities outside of **Mexico, Guatemala, Honduras and El Salvador**.

Haitians have been migrating to the U.S. in large numbers from South America for several years, many having left their Caribbean nation after a devastating 2010 earthquake. After jobs dried up from the 2016 Summer Olympics in Rio de Janeiro, many made the dangerous trek by foot, bus and car to the U.S. border, including through the infamous Darien Gap, a Panamanian jungle.

Shift from Trump to Joe Biden Policy Decision

The rapid expulsions were made possible by a pandemic-related authority adopted by former President Donald Trump in March 2020 that allows for migrants to be immediately removed from the country without an opportunity to seek asylum. President Joe Biden exempted unaccompanied children from the order but let the rest stand.

Any Haitians not expelled are subject to immigration laws, which include **rights to seek asylum and other forms of humanitarian protection**. Families are quickly released in the U.S. because the government cannot generally hold children.

Some people arriving on the first flight covered their heads as they walked into a large bus parked next to the plane. Dozens lined up to receive a plate of rice, beans, chicken and plantains as they wondered where they would sleep and how they would make money to support their families.

15 NEPAL PRINCIPLE - 'AMITY WITH ALL AND ENMITY WITH NONE'.

Addressing the General Debate of the UNGA's Narayan Khadka said that Nepal's worldview is shaped by its adherence to the principle of 'amity with all and enmity with none'.

Nepal's friendship with both neighbours, India and China, remains of "paramount importance" in the conduct of its foreign policy, the country's new Foreign Minister Narayan Khadka has said at the high-level **76th United Nations General Assembly**.

Addressing the General Debate of the UNGA's final day, Mr. Khadka said that Nepal's worldview is shaped by its adherence to the principle of '**amity with all and enmity with none**'.

The government of Nepal led by Prime Minister Sher Bahadur Deuba is "committed to conduct the foreign policy on the basis of sovereign equality, **Mutual Respect, And Mutual Benefit And Remains Engaged** with all friendly countries in the wider international community," he said.

"Our friendship with both of our neighbours, India and China, remains of paramount importance in the conduct of our foreign policy based on the **principles of Panchsheel** - five principles of **peaceful co-existence**, derived from the teachings of Lord Buddha, the enlightened son of Nepal," he said.

The Five Principles, as stated in the Sino-Indian Agreement 1954, are listed as:

- mutual respect for each other's territorial integrity and sovereignty,
- mutual non-aggression,
- mutual non-interference in each other's internal affairs,
- equality and co-operation for mutual benefit, and
- peaceful co-existence.

Commentary and Criticism

Bhimrao Ambedkar said of the treaty in the Rajya Sabha "I am indeed surprised that our Hon'ble Prime Minister is taking this Panchsheel seriously, you must be knowing that Panchsheel is one of the

significant parts of the Buddha Dharma. If Shri Mao had even an iota of faith in Panchsheel, he would have treated the Buddhists in his country in a different manner." In 1958, Acharya Kriplani had said the Panchsheel was 'born in sin' because it was set forth with the destruction of a nation; India had approved of ancient Tibet's destruction.

In 2014, Zhao Gancheng, a Chinese scholar said that on the surface Panchsheel seemed very superficial; but under Xi Jinping Administration it has become relevant again. In 2014, Ram Madhav wrote a piece in the Indian Express titled, 'Moving beyond the Panchsheel deception' and said that if India and China decide to move on from the Panchsheel framework, it will benefit both countries.

The relevance of these principles as a framework for interstate relations cannot be overstated in the present context, Mr. Khadka, who was appointed as Nepal's Foreign Minister on September 22, said.

"Principles and purposes of the U.N. Charter, non-alignment, international law and norms of world peace form the basis of our foreign policy," he said.

Mr. Khadka told the General Assembly that "we live in troubled times" and asserted that there has been a dramatic shift in geopolitics and geo-economics in the post-Cold War era posing unprecedented challenges on all fronts.

"The **World's Economic Center of Gravity** is shifting decisively towards Asia, centered on the economic growth of China and India. At the same time, the world is becoming more complicated and polarised, with

transnational challenges ranging from terrorism to climate change to food security to mass migration to political radicalism and extremism,” he said.

Addressing world leaders, Mr. Khadka also expressed gratitude to India and China for their support to the Himalayan nation in the fight against the pandemic.

“In Nepal, saving lives, strengthening **the health system**, and pursuing **economic recovery and transformation underpin** our efforts to build a sustainable and resilient recovery. Despite constraints and challenges to access COVID-19 vaccines, we have been able to vaccinate close to 20% of our population.”

“We remain grateful to our immediate neighbours - India and China for their support in fighting the Covid crisis,” he said and also thanked ‘friendly countries’ like the United States, Britain, Japan and others for providing vaccines, critical medical equipment, and medicines in Nepal’s fight against the pandemic.

Condemning terrorism in all its forms and manifestations, Nepal denounced all activities aimed to fuel social discord, communal conflicts, and intolerance.

“There is a need of robust global cooperation to effectively implement the UN Global Counter-Terrorism Strategy, to combat and control financing of terrorism, and to fight the organised trans-border crimes. This underlines the urgency for conclusion of a comprehensive convention against terrorism,” Mr. Khadka said.

Mr. Khadka also termed as ‘worrisome/ new signs of arms race through modernisation of nuclear arms, and weaponisation of outer space among big powers. “We call upon them to divert precious resources from military spending to addressing the COVID-19 pandemic and lifting the most vulnerable people out of poverty.

“The mechanisms of disarmament as well as the measures of non-proliferation and confidence building have been stalled. Nepal calls for general and complete disarmament of all weapons of mass destruction in a time-bound and verifiable manner,” he said.

16 FIRST HIMALAYAN FILM FESTIVAL CONCLUDES; ‘SEKOOL’, ‘SHADEY

Ladakhi filmmakers **Stenzin Tankong** and **Stanzin Gurmet**, and three short films were felicitated at the inaugural edition of the **Himalayan Film Festival**, with Lieutenant Governor R K Mathur strongly pitching for continuance the movie gala as an annual event to showcase talent of the Himalayan region.

Lieutenant Governor of Ladakh presided over the function as the chief guest. Secretary, Ministry of Information and Broadcasting (MIB), Government of India (GoI), Apurva Chandra, and renowned Filmmaker Rakyesh Ompraksah Mehra were the special guests, an official spokesman said.

While Tankong’s acclaimed film **‘Sekool’ won the best story award**, ‘Shadey: A Forgotten Land’ by Gurmet received the best editing award. Four award-winning entries were screened in the closing session.

The award of best three short films was bagged by ‘The Tainted Mirror’ (Meiteilon/Manipur), ‘Go for Organic’, and ‘Homework and Godliness’, which were awarded the cash prize of Rs 3.5 lakh each.

The festival concluded with the screening of the internationally acclaimed film **‘Shepherdess of the Glaciers’** by renowned Ladakhi filmmaker Stanzin Dorjai.

Speaking at the closing function, Mathur expressed happiness over the success of the festival and said it should continue as an annual event. For better training of the local film aspirants, the lieutenant governor said the administration is working towards tying up with the **Film and Television Institute of India (FTII)**, Pune to provide courses in Ladakh.

Gyalson also urged veteran film makers from Ladakh to encourage budding filmmakers to explore the film industry with their talent and fulfil their potential.

He also suggested taking up the idea of organising a national-level festival on short films to encourage aspiring filmmakers from smaller regions like Ladakh. Chandra requested the administration to draft a film policy and provide incentives to the filmmakers to shoot in Ladakh. He assured all possible support to the filmmakers of Ladakh from the MIB.

Filmmaker Mehra, known for '**Bhaag Milkha Bhaag**' and '**Rang De Basanti**', suggested making the movie gala an international affair in future. He proposed to invite interns from Ladakh to his production house, adding he is willing to spend a month in the union territory every year to impart skill training to aspiring filmmakers.

The festival also held master class sessions with **Priya Krishnaswamy, S Nallamuthu, Nila Madhab Panda, Phontsog Ladakhi** and in-conversation sessions with **Anupama Chopra, Vidhu Vinod Chopra, and Nikhil Talegaonkar**.

17 INDIGENOUS PROTEST- PARAGUAY'S CAPITAL ERUPTS IN VIOLENCE

Indigenous groups demonstrated in Paraguay's capital against a law that makes it a crime to invade private property, and the protest escalated into violence that authorities said saw seven police officers injured, four cars set on fire and other acts of vandalism.

The police command said one officer was hit by an arrow shot by archers from an ethnic group not yet identified. Television coverage showed the commander of a police station about 300 meters (yards) from the Congress building lying on the ground and being hit by demonstrators with stones and sticks. Prosecutors said those protesters could not be identified as Indigenous.

The unrest began when the 80-member Chamber of Deputies approved an amendment to the land invasion law that would increase the penalty to six years in prison from four for those who illegally occupy private property.

Indigenous groups often invade properties to press their demands that land be given to poor farmers. The group is the largest in Paraguay representing poor farmers, some of whom own land but others who do not. It seeks justice for Indigenous people whose lands were taken away and given to others during the autocratic regime of Gen. Alfredo Stroessner in 1954-1989.

The country's **Truth and Justice Commission**, created by law to investigate human rights violations during the Stroessner regime, presented a 6,000-page report in 2006 saying that nearly two-thirds of land allocated during the regime's agrarian reform campaign went to people close to the government. It said none of those people was poor.

18 THE HISTORY OF GOLCONDA ON STAGE

In Hyderabad, 18 actors at Nishumbita theatre group will play a total of 182 characters in 90 minutes to narrate the origin of Golconda kingdom and other stories associated with it.

The presentation, titled Golakonda, will incorporate puppetry, Telangana's traditional art forms such as **Burra Katha, Dappu Dance and Perini with Kuchipudi And Bharatanatyam**.

Nishumbita's founder-director **Rammohan Holagundi** says the theatrical production combines dance ballet and docudrama.

Golconda was earlier called **golla konda**, named after shepherds (gollolu in Telugu) exploring the hillock (konda), after they discovered a deity. "Golakonda looks at the origin story of the kingdom, before tracing

Who is the founder of Asaf Jahi Dynasty?

Mir Qamar-ud-Din Siddiqi

The dynasty was founded by **Mir Qamar-ud-Din Siddiqi**, a Viceroy of the Deccan - (administrator of six Mughal governorates) under the Mughal emperors from 1713 to 1721. He intermittently ruled after Aurangzeb's death in 1707 and under the title Asaf Jah in 1724.

Why was the dynasty of Hyderabad called Asaf Jahi?

In 1724, **Asaf Jah I defeated Mubariz Khan to establish autonomy over the Deccan Suba,**

named the region Hyderabad Deccan, and started what came to be known as the Asaf Jahi dynasty. Subsequent rulers retained the title Nizam ul-Mulk and were referred to as Asaf Jahi Nizams, or Nizams of Hyderabad.

Who founded Hyderabad?

Hyderabad is the capital of Telangana state and temporary capital of Andhra Pradesh state. The city, founded in the year 1591 by **Mohammed Quli Qutub Shah**, the fifth sultan of Qutb Shahi dynasty, offers a fascinating panorama of the past, with richly mixed cultural and historical tradition spanning over 400 years.

the rise of the **Asif Jahi Dynasty**, Ibrahim Quli Qutb Shah's romance with Bhagmati, Jamsheed Quli Qutb Shah's quest for power, the construction of Charminar, how Hyderabad was affected by plague (in 1911) and more."

During the pandemic, members of Nishumbita began research for the production. Elderly men and women aged 85 and above, living in the vicinity of the fort, shared the stories they had heard while growing up.

The research also brought to fore lesser known facts. For instance, **River Musi was earlier called Narva.**

Golakonda shaped as a production that warranted several sets, props and lights. "Twenty five of us, including the technical crew, have been rehearsing for more than two months," says Holagundi.

19 INDIA SHAPED BY GEOGRAPHY - BAEL, VETIVER, KOKUM AND DARJEELING TEA

Kokum mocktails, bael cocktails, Darjeeling tea coolers and chikoo-flavoured beer now jostle for space on Indian bar and dining menus. Drinks that hero indigenous ingredients are this year's fastest growing trend, fuelled by a rising interest in regional produce combined with a pandemic-induced hankering for comforting childhood flavours.

So **bael ka sharbat** now has a chic new avatar, as a bael cocktail at Sidecar in Delhi. It is a whiskey or vodka-based alcoholic drink with bael shrub. The inky blue pea flower, which grows wild in parts of India, has found its way into everything from tea to gin-based cocktails. And the **Indian olive, or jalpai**, infused iced tea has become an epicurean trend for cafe hopping Instagrammers in **Imphal, Manipur.**

Indian olives or Jalpai getting ready to dried at Dweller teas

The **Indian olive, like peach**, is a stone fruit have a mild spicy fragrance and is extremely sour, which is why it works for Eli's concoction.

Meanwhile Maharashtra-based Priyanka Save runs Fruzzante, a brand of alco-beverage made from chikoo (**Sapodilla**) extracts. Being a farmer's daughter, Priyanka says she knows the highly perishable chikoo like the back of her hand.

Award-winning mixologist **Yangdup Lama**, founder of Delhi-based Sidecar, agrees with Priyanka. Now experimenting with fermented millet juice in cocktails, he says, "I take pride in experimenting with locally appreciated flavours. Consumers don't want to simply gulp down something colourful and sweet anymore.

I use a lot of **VETIVER, Rhododendron Flowers, Darjeeling Tea, Herbs And Chillies** to give that experience. Since there is a natural inquisitiveness to try new flavours, it becomes our responsibility to combine regional flavours, whether fruits, herbs and spice, to narrate an exciting story of the place it comes from.”

One of the most popular local flavours now is the **Gondhoraj Lebu**, a highly scented lemon from West Bengal, with the **Kick of King Chilli** (bhoot jolokia from Northeast India) in close pursuit. However, it is not just unfamiliar ingredients that are being appreciated; people are also redicovering familiar flavours. **Nannari**, a herbal drink made from the herb roots of the Nannari tree with origins in The **Rayalaseema Region** of Andhra Pradesh, is increasingly finding its place on the menu across southern India.

Thekera and Teteli sorbot at Kohuwa Collective in Guwahati

Leaning on childhood memories, **Subhasish Borah and Bidisha of Kohuwa** Collective a collaborative space and slow food cafe in Guwahati recently introduced **thekera sorbot** (kokum sherbet), **teteli sorbot** (tamarind sherbet) and **ou tenga sorbot** (elephant apple sherbet). Assamese thekera sorbot is different from the ones made in the coastal region. The kokum found in Assam is **kuji thekera** which belongs to the garcinia family. We decided to make a drink with elephant apple because we wanted to introduce the unique flavour of this fruit, which is otherwise used as souring agent in curries, in a more versatile manner.”

20 THE MAN WHO REDEFINED KATHAKALI'S VOCAL MUSIC

In the composite art-form of Kathakali, the vocal music embodies the **vachikaabhinaya** (verbal acting). This feature stands out as a definite departure from its predecessor, Koodiyattam, in which the actors speak in chaste Sanskrit, Prakrit and Malayalam based on the characters they present on stage.

Till the dawn of the 20th century, the vocal music of Kathakali might have faintly followed the canons of Sopana Sangeetam , sung by the Marars and Poduwals beside the sanctum sanctorum. After an intimate reading of the visual grammar of Kathakali with its unfailing accent on the navarasas, **Mundaya Venkitakrishna Bhagavathar** strongly felt that the dance form's vocal music should be redefined and restructured, to empower the text, contexts and characters. He undertook the task almost all alone and the rest is history.

Hailing from a family of musicians in Mundaya, a sleepy village near Shoranur in Palakkad district, **Venkitakrishna** initially trained in Kathakali under Moothedath Vasudevan Namboodiri. After performing a few female roles, he quit to pursue vocal music under the same guru. Along with his brothers, Raman and Shankaran, he trained in Carnatic music too and by age 20 Venkitakrishna became prominent as the principal vocalist on the Kathakali stage. He came to be known as **Venkitakrishna Bhagavathar** in the cultural circles of central Kerala. According to art historian K.P.S. Menon, his training in acting was instrumental in shaping his career as a successful vocalist.

From the perspective of music, Kathakali plays can be broadly divided into two categories - the ones by Kottayath Thampuran and a few others , which seldom allow the vocalists to create an emotional ambience that can surpass the strong visual frames; and the plays by **Unnai Warriar, Irayimman Thampi** and the like, which offer ample scope for emotive singing, sometimes competing with the actors. Kathakali artistes perform 'Kiratham' along with the music ensemble at the Vijayawada Dance Festival in 2020

Introducing new ragas

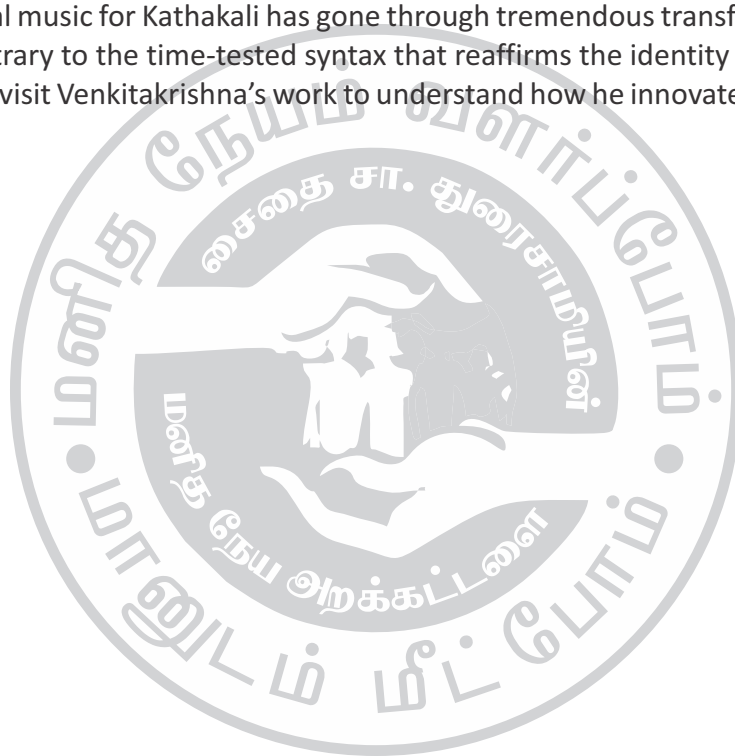
He introduced a host of Carnatic ragas which were new to the vocal music tradition of Kathakali. The conservatives raised their eyebrows when they first heard ragas such as **Khamas, Darbar, Kapi, Sindhubhairavi, Chenchurutti and Nattakurunji**. He converted lengthy padams into ragamalika in order to salvage the listeners from incredible boredom. Venkitakrishna also systematised the rendering of the shlokas and the dandakams (a prose-verse combination used in Kathakali to truncate several incidents in a play) even while retaining the deshi (indigenous) ragas such as Paadi, Khandaram, Puraneeru, Kanakkurinji,

Gaulipandu and Navarasam. Though the phrases of these ragas are repetitive, each one carries a distinctive fragrance appropriate to the character and context. Special care was taken to ensure that the gamakas and brigas employed in the padams did not interfere with the sahitya.

Venkitakrishna was not happy when microphones began to invade the Kathakali stage. “He empowered the actors not only through evocative singing but by constantly moving to observe their actions and expressions. In stark contrast, the vocalists today simply stand in front of the pedestal mikes and sing and do nothing to galvanise the actors,” says percussionist and critic Kalamandalam Krishnankutty Poduwal.

Even during his heydays, Venkitakrishna incurred the wrath of the so-called purists, who lamented the marginalisation of Sopana Sangeetam . But little did they realise that Carnatic music had already exerted its influence even on Kerala’s traditional temple orchestra, **Panchavadyam, and on Thayambaka**, the solo recital on the chenda. Interestingly, those who spearheaded these revolutionary changes were **Thiruvilwamala Venkichan Swamy and Kolanthaswamy**, both privileged caste Tamils, as was Subrahmanyappattar, the man who refurbished the Kathakali melam (chenda-maddalam combination).

Over the years, the vocal music for Kathakali has gone through tremendous transformation, some of which unfortunately runs contrary to the time-tested syntax that reaffirms the identity of the art-form. Which is why it is important to revisit Venkitakrishna’s work to understand how he innovated within the frameworks of tradition.



1 AYUSH CAMPAIGN TAKES OFF IN 100 GOVT. SCHOOLS

As many as 100 government schools in Mysuru district are now part of 'Namma AYUSH Namma Swasthya' campaign launched as part of 'Azadi Ka Amrutha Mahotsava' to sensitise the children on the importance of 'AYUSH'.

Acting on the directions from the **National Commission for Indian Systems of Medicine**, about **100 schools were identified for the campaign** which was formally inaugurated by Mysuru Zilla Panchayat .

In pursuance of the provisions of National Commission for Indian System of Medicine (NCISM) Act 2020 (14 of 2020), the Indian Medicine Central Council (IMCC) Act 1970 (48 of 1970) has been repealed and all the provisions of the National Commission for Indian System of Medicine (NCISM) has been come into force with effect from the 11th day of June 2021.

Under the provisions of section 59 (2) of NCISM Act 2020 the Central Government has constituted the

Commission and four Autonomous boards on the same day. Medical standards, requirements and other provisions of the IMCC Act 1970 and the rules and regulations made there under shall continue to be in force and operate till new standards or requirements as specified under new act or rules and regulations made thereunder come into force. However, the provisions of concerned regulations which are inconsistent with the provisions of NCISM Act 2020 shall not be applicable.

VISION AND MISSION

The Aims and objectives of the National Commission for Indian System of Medicine are to -

1. Improve access to quality and affordable Ayurveda, Unani, Siddha and Sowa-Rigpa (AUS&SR) medical education
2. Ensure availability of adequate and high quality AUS&SR medical professionals in all parts of the country;
3. Promote equitable and universal healthcare that encourages community health perspective and makes services of AUS&SR medical professionals accessible to all the citizens;
4. Encourage medical professionals to adopt latest medical research in their work and to contribute to research;
5. Objectively assess and rate medical institutions periodically in a transparent manner;
6. Maintain a National AUS&SR medical register for India;
7. Enforce high ethical standards in all aspects of AUS&SR medical services;

8. Have an effective grievance redressal mechanism.

Constitution of the National Commission for Indian System of Medicine:

The Bill provides for the establishment of the National Commission for Indian System of Medicine (NCISM). The NCISM will consist of 29 members, appointed by the central government. A Search Committee will recommend names to the central government for the post of Chairperson, part time members, and presidents of the four autonomous boards set up under the NCISM. These posts will have a maximum term of four years. The Search Committee will consist of five members including the Cabinet Secretary and three experts nominated by the central government (of which two should have experience in any of the fields of Indian System of Medicine).

- Members of the NCISM will include: (i) the Chairperson, (ii) the President of the Board of Ayurveda, (iii) the President of the Board of Unani, Siddha, and Sowa-Rigpa, (iv) the President of the

Medical Assessment and Rating Board for Indian System of Medicine, (v) Advisor or Joint Secretary in-charge of Ayurveda, Ministry of AYUSH, and (vi) three members (part-time) to be elected by the registered medical practitioners of

Ayurveda, and one member each by the respective registered medical practitioners of Siddha, Unani, and Sowa-Rigpa from amongst themselves from the prescribed regional constituencies under the Bill.

NATIONAL COMMISSION FOR INDIAN SYSTEM OF MEDICINE

1. To provide medical education system that improves access to quality and affordable medical education,
2. To ensure availability of adequate and high-quality medical professionals of Indian System of Medicine in all parts of the country;
3. To promote equitable and universal healthcare that encourages community health perspective and makes services of such medical professionals accessible and affordable to all the citizens;
4. To promote national health goals;
5. To encourage such medical professionals to adopt latest medical research in their work and to contribute to research;
6. To carry out Periodic and transparent assessment of medical institutions
7. To facilitate maintenance of a medical register of Indian System of Medicine for India and enforce high ethical standards in all aspects of medical services;
8. To provide Medical Education System that is flexible to adapt to the changing needs and has an effective grievance redressal mechanism and for matters connected therewith or incidental thereto.

Mr. Yogesh, who planted medicinal plants on the school premises on the occasion, spoke about the enormous contributions of Ayurveda to the country's healthcare system.

2 CHINA'S- ANTI-MONOPOLY, DATA SECURITY CRACK DOWN

e-Commerce giant Alibaba Group said it will spend \$15.5 billion to support President Xi Jinping's campaign to spread China's prosperity more evenly, adding to pledges by tech companies that are under pressure to pay for the ruling Communist Party's political initiatives.

Alibaba said it will invest in 10 projects for job creation, "care for vulnerable groups" and technology innovation. Its 100 billion yuan (\$15.5 billion) pledge includes 20 billion yuan for a fund to "cut income inequality" in the company's home province of Zhejiang, south of Shanghai.

Alibaba and other Chinese tech giants including games and social media service **Tencent Holdings Limited** have announced plans to invest in social welfare, technology development and other ruling party priorities in response to pressure to align with Beijing's political and economic plans.

Xi's "common prosperity" campaign calls for spreading the benefits from China's economic growth more widely and narrowing **one of the world's widest gaps between an elite with more billionaires** than the United States and the poor majority in the 1.4 billion population.

Beijing has launched **Anti-Monopoly, Data Security** and other crackdowns on internet industries since late 2020 in an effort to tighten control over companies the ruling party worries might be too big and independent.

The ruling party tolerated a widening gap between China's rich and poor as the economy boomed over the past three decades. Xi, who took power in 2012, has called for renewing the party's "original mission," which includes eradicating poverty, raising incomes and directing investment toward strategic technology and other initiatives.

Tencent promised 50 billion yuan (\$7.7 billion) last month for “**common prosperity**” initiatives in **health care**, education and rural development. That doubled the company’s spending on corporate social responsibility.

Another e-commerce company, **Pinduoduo Inc.**, promised last month to spend **\$1.5 billion** on agriculture and other rural development projects.

Alibaba reported a profit of 45.1 billion yuan (\$7 billion) in the quarter ending in June.

3 MICROSOFT PARTNERS WITH NATIONAL INSTITUTE OF OPEN SCHOOLING TO BUILD CUSTOMISED CLASSES

Microsoft has partnered with India’s open schooling platform, **National Institute of Open Schooling (NIOS)**, to build customized classes, labs and sessions. The institute **was established in 1989 by the Ministry of Education**, and a year later, it was authorized to test and certify learners of pre-degree level courses.

NATIONAL INSTITUTE OF OPEN SCHOOLING

The **National Institute of Open Schooling (NIOS)**, formerly **National Open School** (name changed in 2002), is the board of education under the Union Government of India. It was established by the **Ministry of Human Resource Development** of the Government of India in 1989 to provide education to all segments of society under the motive to increase literacy and aimed forward for flexible learning. The **NIOS is a national board** that

administers examinations for **Secondary and Senior Secondary examinations similar to the CBSE and the CISCE**. It also offers vocational courses after the high school.

NIOS had a cumulative enrollment of about **1.5 million students from 2004 to 2009** at secondary and senior secondary levels and enrolls about 350,000 students annually which makes it the largest open schooling system in the world.

INTERNATIONAL COLLABORATION AND OVERSEAS CENTRES

The NIOS collaborates with the **Commonwealth of Learning (COL) and UNESCO**. It also has study centres for Indian expatriates in the Bahrain, United Arab Emirates, Oman, Kuwait, Nepal, Canada, Kingdom of Saudi Arabia, Australia, United Kingdom, New Zealand, Malaysia, Singapore and the United States of America.

April–May and October–November on dates fixed by the NIOS. However, one also eligible to appear through the On-Demand Examinations at Level and Senior Secondary level in those subjects only in which candidates have taken admission in NIOS for subject wise learning. Results of the public examinations are announced usually six weeks after the last date of examinations.

The **public examinations are held twice a year** in

Microsoft will provide a customized tech platform for NIOS with live classes and labs, recorded sessions, remote proctored exams and assessments along with skill-based courses and certifications. Students across NIOS will also have access to digital courses on technologies like artificial intelligence, cloud computing, cyber security and data sciences.

This platform for NIOS will be built on the Microsoft stack of Teams, M365 and Azure. “**Technology is playing a bigger role than ever in transforming education, improving learning outcomes and better preparing students for the new world of work,**” said Navtez Bal, Executive Director, Public Sector, Microsoft India.

4

SEBI TWEAKS INVESTOR GRIEVANCE REDRESSAL MECHANISM FRAMEWORK

Capital markets regulator **Securities and Exchange Board of India (SEBI)** tweaked the framework on investor grievance redressal mechanism after receiving representation from stock exchanges.

The regulator has modified framework pertaining to speeding up grievance redressal mechanism and threshold limit for interim relief paid out of **Investor Protection Fund (IPF)** of the stock exchange among others.

With regard to the place of arbitration or appellate arbitration in case award **amount is more than ₹50 lakh**, SEBI said the next level of proceedings may take place at the nearest metro city, if desired by any of the party involved.

In all cases except the additional fees charged from the trading members, if the claim is filed beyond the prescribed timeline (only for member) on issue of the arbitral award then the stock exchange will refund the deposit to the party in whose favour the award has been passed.

The stock exchanges will have to ensure that once a member has been declared defaulter, the claim will be placed before the **Member Core Settlement Guarantee Fund Committee (MCSGFC)**, the erstwhile defaulters' committee) for sanction and ratification. The committee's advice with respect to legitimate claims will be sent to the IPF trust for disbursement of the amount immediately.

"In case the claim amount is more than the coverage limit under IPF or the amount sanctioned and ratified by the MCSGFC is less than the claim amount then the investor will be at liberty to prefer for arbitration outside the exchange mechanism / any other legal forum outside the exchange mechanism for claim of the balance amount," SEBI said.

In case the appellate arbitration award is in favour of the client and the member opts for making an application under Arbitration and Conciliation Act, to set aside the appellate arbitration award, then, 75% of the amount mentioned in the appellate arbitration award or ₹5 lakh, whichever is less and the amount already released to the client under the above mentioned two clauses will be released to the client. Total amount released to the client through the facility of interim relief from IPF should not exceed ₹10 lakh in a financial year, SEBI said.

5

NORWAY FUND EXITS ONGC DUE TO SOUTH SUDAN

Norway's **\$1.4-trillion wealth fund** has excluded **Oil and Natural Gas Corp.** from its portfolio due to concerns over the firm's business in South Sudan, the fund said in a statement. Exclusions are based on advice from the fund's ethics watchdog.

The Council on Ethics' concern was over ONGC's participation in two joint ventures in South Sudan, a country where violent clashes continue even after the end of a civil war in 2018. "ONGC ... has accepted a risk of contributing to serious abuse committed to enable oil production in the country," it said.

6

US IS INDIA'S TOP EXPORT MARKET

The **United States** remains one of the top sources of **Foreign Direct Investment** in India, the U.S. Consul General in Chennai Judith Ravin said.

"Accessing the US Market", she said the **United States is India's top export market**. For more than a decade, Indian firms have also expanded in to the US, taking advantage of a large, open market with business-friendly investor policies.

The Consul General went on a **Nature Walk** with conservationists at the **Nilgiri Biosphere Nature Park**. She then met with students, faculty and management of Vidya Vanam Senior Secondary School. The Consul General ended her first trip to Coimbatore with a visit to the **Gedee Car Museum**.

"I am impressed with the strength of U.S.-India ties here, and with the many key institutions invested in furthering our relationship. I look forward to building on these important collaborations," she said, according to a press statement.

7 INDIA URGES EARLY TRIPS WAIVER RULING ON COVID SHOTS AT WTO

India has pitched for an early outcome of the TRIPS waiver proposal for COVID-19 vaccines, therapeutics and diagnostics in the **World Trade Organisation (WTO)**, the government .

Addressing a meeting attended by trade and economic ministers of **BRICS countries**, Commerce and Industry Minister Piyush Goyal also stressed on finding a permanent, adequate and equitable solution to the public stock holding programmes for food security purposes.

The minister emphasised "the need for a permanent, adequate and equitable solution to the Public Stock Holding programmes for food security purposes; early outcome of the **TRIPS Waiver** proposal for vaccines," the government said.

What is the importance of TRIPS Agreement?

The TRIPS Agreement **ensures that computer programs will be protected as literary works under the Berne Convention and outlines how databases must be protected under copyright**; It also expands international copyright rules to cover rental rights.

What is TRIPS plus agreement?

'TRIPS-plus' is **an informal term for protection of intellectual property rights that goes beyond the requirements in the TRIPS Agreement**.

What are the three main features of TRIPS Agreement?

The three main features of TRIPS are **standards, enforcement and dispute settlement**.

What is copyright?

The Berne Convention provides that the copyright,

which is a property right owned by the author, includes the right of translation (Article 8), the right of reproduction (Article 9), the rights of performance and communication (Article 11), the rights of broadcasting or transmitting (Article 11bis), the right of public recitation (Article 11ter), the rights of adaption and arrangement (Article 12), and the rights of cinematographic adaptation, reproduction, distribution, public performance and public communication (Article 14). Further, the Berne Convention states that a cinematographic work shall be protected as an original work and the owner of copyright in a cinematographic work shall enjoy the same rights as the author of an original work (Article 14bis). On the other hand, the Berne Convention imposes certain limits on the rights of authors, permitting the use of works that have already been lawfully made available to the public (Article 10), and the reproduction, etc. of articles on current events.

In October 2020, **India and South Africa** had submitted the first proposal, suggesting a waiver for all WTO members on the implementation of certain provisions of the TRIPs Agreement in relation to the prevention, containment or treatment of COVID-19.

In May 2021, a revised proposal was submitted by **62 co-sponsors, including India, South Africa, and Indonesia**. Mr. Goyal also said the **BRICS countries** should work together for strengthening the multilateral system, stating that there was a need for a balanced and inclusive outcome in the forthcoming WTO Ministerial Conference.

Union Minister for Women and Child Development Smriti Irani said pregnant women's health should be a joint responsibility of the family.

Speaking at **Poshan Jagrukta Abhiyaan** (nutrition awareness campaign) programmes organised by the Union Ministry for **Women and Child Development** and Union Ministry for **Minority Affairs for women from minority communities**, she also stressed the importance of good nutrition.

"Discussions on maternal health are no longer confined to women. Nowadays, men are also thinking about women's health. Pregnant women's health should be a joint responsibility of the family," she said.

POSHAN JAGRUKTA ABHIYAAN

Why POSHAN Abhiyaan launched?

Poshan Abhiyaan was launched by Hon'ble Prime Minister on 8th March, 2018 in Jhunjhunu district of Rajasthan. The focus of Abhiyaan is to **lay emphasis on nutritional status of adolescent girls, pregnant women, lactating mothers and children from 0-6 years age.**

What is full form of POSHAN?

Launched by the Prime Minister on the occasion of the International Women's Day on 8 March, 2018 from Jhunjhunu in Rajasthan, the POSHAN (**Prime Minister's Overarching Scheme for Holistic Nutrition**) Abhiyaan directs the attention of the country towards the problem of malnutrition and address it in a mission-mode.

What are the activities of Poshan abhiyaan?

- Anemia Camp.
- Area Level Federation (ALF) Meetings.
- CBE – Community Based Events (ICDS)
- Community Radio Activities.
- Cooperative / Federation.
- Cycle Rally.

- DAY-NRLM SHG Meet.
- Defaeat Diarrhoea Campaign (D2)

Is Poshan Abhiyan part of ICDS?

Real Time Monitoring of activities in Aanganwadi Centres in POSHAN Abhiyaan (National Nutrition Mission) districts. The ICDS-Common Application Software (CAS) is one of the main components of POSHAN Abhiyaan.

What is the National nutrition Mission?

The mission is a **multi-ministerial initiative and aims at removing malnutrition from the country by 2022.** Poshan Abhiyaan is India's flagship scheme to improve the nutritional outcomes of adolescents, children, pregnant women and lactating mothers.

What is POSHAN Abhiyan 2.0?

Poshan 2.0 shall **focus on Maternal Nutrition, Infant and Young Child Feeding Norms, Treatment of MAM/SAM and Wellness through AYUSH.** It will rest on the pillars of Convergence, Governance, and Capacity-building.

"If we want to be able to tell the world that **not a single child in India suffers from malnutrition**, then it is important for members from all communities to come forward," Ms. Irani said.

The **National Digital Health Mission** was launched on August 15 2020 to provide a health ID to every Indian, he said. "Over 2.11 crore people were provided free medical treatment under the Jan Arogya Yojana," he said, adding that 15 new AIIMS were approved since 2014. "Over 8,000 **Jan Aushadhi Kendras** across the country are giving medicines at affordable prices to the poor," the BJP leader said. "About four crore children were vaccinated against various diseases under Mission Indradhanush," he added.

“The Central government's Poshan Abhiyaan has become an **effective mass movement** to eradicate malnutrition in the country, especially among **Children, Adolescent Girls, Pregnant Women And Lactating Mothers**,” Mr. Naqvi added.

9

EXPLAINED | WHAT CAUSED THE SRI LANKAN ECONOMIC CRISIS?

Sri Lanka's government **declared an economic emergency in Sep 2021** amid rising food prices, a depreciating currency, and rapidly depleting forex reserves. President Gotabaya Rajapaksa has called in the army to manage the crisis by rationing the supply of various essential goods.

Why is Sri Lanka's economy in trouble?

A number of factors have led to the current economic crisis in Sri Lanka.

The **tourism industry**, which represents over **10% of the country's Gross Domestic Product** and brings in foreign exchange, has been hit hard by the coronavirus pandemic.

As a result, forex reserves have dropped from over **\$7.5 billion in 2019 to around \$2.8 billion in July 2021**. With the supply of foreign exchange drying up, the amount of money that Sri Lankans have had to shell out to purchase the foreign exchange necessary to import goods has risen. So the value of the **Sri Lankan rupee has depreciated by around 8%** so far this year. It has to be noted that the country depends heavily on imports to meet even its basic food supplies. So the price of food items has risen in tandem with the depreciating rupee.

The government's **ban on the use of chemical fertilisers in farming** has further aggravated the crisis by **dampening agricultural production**. Earlier this year, Mr. Rajapaksa made public his plan to make **Sri Lanka the first country in the world with an agriculture sector that is 100% organic**. Many, such as Sri Lankan tea expert Herman Gunaratne, believe that the forced push towards organic farming could **halve the production of tea and other crops** and lead to a food crisis that is even worse than the current one.

What has been the government's response to the crisis?

The Sri Lankan government has blamed speculators for causing the rise in food prices by hoarding essential supplies and has declared an economic emergency under the Public Security Ordinance. The army has been tasked with the duty of seizing food supplies from traders and supplying them to consumers at fair prices. It has also been given the powers to ensure that forex reserves are used only for the purchase of essential goods. The government has refused to end its aggressive push for complete organic farming claiming that the short-term pain of going organic will be compensated by its long-term benefits. It has also promised to supply farmers with organic fertilisers as an alternative. Further, **Sri Lanka's central bank earlier this year prohibited traders** from exchanging more than 200 Sri Lankan rupees for an American dollar and stopped traders from entering into forward currency contracts.

Will the government's response help the economy?

Mr. Rajapaksa's drive to make Sri Lankan agriculture fully organic is likely to lead to a significant drop in domestic food production and cause a further rise in prices. Also, the various steps taken by the government to tackle the crisis may actually make things worse. The capping of food prices, for instance, can lead to severe shortages as demand exceeds supply at the price fixed by the government. People have already had to queue up to buy essential goods due to rising shortages.

Further, the decision of the Sri Lankan central bank to ban forward contracts and the spot trading of rupees at above 200 rupees to an American dollar may affect essential supplies. For example, a rice trader who wants to pay more than 200 rupees for an American dollar to import rice may no longer be able to carry out the trade. In fact, trading of currency in the spot market has dried up since the central bank's order. Also, without forward contracts, which help traders offload the risk of currency volatility onto professional speculators, many traders may be unwilling to import essential supplies.

10 NMDC SLASHES IRON ORE BY ₹ 1,000 A TONNE

The new prices are ₹6,150 per tonne for Lump Ore and ₹5,160 for the same quantity of Fines, the company. The **Country's Largest Iron Ore Producer** has reduced the prices. NMDC had reduced the prices by ₹200 per tonne, for both Lump and Fines. The next month it slashed the price of Lump by ₹300 a tonne to ₹7,150 and that of Fines by ₹200 to ₹6,160.

11 FACILITY PLANNED NEAR CITY FOR AYURVEDIC MEDICINES

New Delhi-based Jivika Ayursciences plans to set up a manufacturing facility for ayurvedic medicines and supplements near Hyderabad with an investment of ₹120 crore.

"We should be operational in seven months from now," CEO L.Mani Varghese said on the likely time-frame for commissioning of the plant. **Genome Valley, near Hyderabad**, is where the facility is proposed to come on about 3.5 acres to be allotted by the State government.

Jivika Ayursciences, whose existing manufacturing facility is in **Karnal, Haryana**, plans to launch its first set of **30 ayurvedic healthcare products** in the country. The company in a release said the proposed plant would have production facilities for Ayurvedic medicines, herbal supplements and herbal extracts.

12 WHAT IS THE NEW FRAMEWORK TO SHARE FINANCIAL DATA? - EXPLAINED

Questions:

Why has RBI launched the account aggregator?

Will the easier availability of information benefit the economy?

Back Ground: The Reserve Bank of India launched the **account aggregator framework** aimed at making financial data more easily accessible. Under it, a number of fin-tech entities have been granted the licence to operate as account aggregators. Eight large banks have also agreed to share various financial data about their customers with account aggregators.

How will an account aggregator work?

The framework will allow financial data to be exchanged between the holders of data and its users. The RBI has allowed a number of companies like PhonePe to act as account aggregators to facilitate this process. Account aggregators will act as intermediaries who will collect data from one financial entity and exchange it with another.

For example: A bank which is processing a loan application from a potential borrower may want to access a variety of financial data about the borrower. The lending bank can access details of the **borrower's savings, past loan repayment record, mutual fund holdings and insurance holdings through an account aggregator**. The borrower, however, will have to grant consent for the sharing of his data with the lending bank.

What are its benefits?

At the moment, the various financial data of an individual is scattered across the databases of several financial institutions.

1. So a person's savings and loans data may be with a bank, his investments data may be with a mutual fund, while his insurance data may be with another financial entity. Under the account aggregator framework, all this data can be easily collated and shared through account aggregators with the consent of the individual.
2. Proponents of the framework believe that the easier availability of data will have significant benefits for the economy.
3. They believe the framework will help financial institutions make better assessment of the creditworthiness of individuals, and thus make better loan decisions.
4. Even though mechanisms such as CIBIL already exist to assess the creditworthiness of individual borrowers, their scope is limited.
5. An individual's PAN number, for instance, captures only a limited number of transactions which are of value higher than a certain minimum threshold amount.
6. It is said the framework will offer a wider array of data to financial firms, making them more willing to serve creditworthy populations that they earlier ignored.
7. Account aggregators can also make life easier for creditworthy customers by allowing them to share their financial data digitally with ease, it is believed.
8. The availability of wider financial data may also help financial institutions offer better products tailored to the needs of individual customers.

Future Plans?

1. The issue of the security of the financial data of individuals will be a looming concern going forward, given the risk of data theft.
2. To protect the privacy of individuals, account aggregators are supposed to receive and share financial data in an encrypted form.
3. The RBI has also said the data ownership will reside with individuals. More financial firms are expected to get on board the framework as offering access to their financial databases will help them gain access to the databases of other firms.
4. Over time, financial institutions may also mandate access to data available through account aggregators as a condition for individuals to receive loans and other services.
5. The eventual success of the framework, however, will depend on multiple factors. Some believe an individual's PAN number may be a better way to access his financial data as it serves as a common link between multiple accounts maintained by an individual.
6. Further, the extent to which financial firms desire extensive, micro-level financial data from their customers and the enthusiasm among customers to share their data will also play a crucial role.

13 NEW PRODUCTION-LINKED INCENTIVE SCHEME HELP TEXTILE INDUSTRY?

BACKGROUND:

In Jan 2021 after it **first approved a Production-Linked Incentive (PLI) scheme** for the textile sector, the Union Cabinet cleared it, after the Ministry of Textiles incorporated suggestions from the industry.

With a **total budgeted outlay of ₹10,683 crore**, the government has designed the scheme with a view to providing a big fillip to the man-made fibres and technical textiles segments of the industry.

WHAT ARE THE DETAILS OF THE SCHEME?

The scheme is aimed at promoting industries that invest in the production of 64 select products. The product lines include 40 in man-made fibre apparel, 14 in man-made fibre fabrics, and 10 technical textile segments/products.

The investment period is two years, and the incentive will be paid for five years after the first year of post-investment operation. The scheme is for **two types of investments**.

1. The first entails a minimum of ₹300 crore in plant, machinery, equipment and civil works in a unit that must register a minimum turnover of ₹600 crore once it commences operation.
2. The second is for a minimum of ₹100 crore, where the business achieves a minimum turnover of ₹200 crore.

Thus, the incentive is based on a combination of investment and turnover. While details of the 64 specific products are expected to be announced once the scheme is notified — officials expect it by the end of this month - the government has indicated that the incentive for the higher investment scheme would start at 15% of the turnover for the first year, and 11% in the case of the lower turnover plan, decreasing gradually by 1% each subsequent year over the next four years for both schemes. Priority will also be given to investment in aspirational districts, Tier-3, Tier-4 towns, and rural areas.

WHY THE STRESS ON MAN-MADE FIBRE?

The scheme focuses on the man-made fibre segment to enable the Indian textile and clothing sector to regain its dominant status in the global textiles trade. Currently, Indian production and export of textile and clothing products are largely cotton-based. In 2018-19, while Indian textile and clothing exports amounted to about \$36 billion, less than one-third was man-made fibre-based.

In contrast, of the total textile and clothing exports by China, it is estimated that almost 80% are man-made fibre-based. Similarly, of the Total Global Fibre Manufacturing And Consumption, 70% is man-made fibre-related, while in India it is just about 35%. Annual textile and clothing exports have remained largely stagnant over the last seven years, and stuck in the range of \$30 billion-\$35 billion.

India is ranked sixth in the global trade in this sector. Added to this, in recent years, countries including **Bangladesh and Vietnam** have gained a sizeable share in the man-made fibre segment of the global textile trade, making it all the more vital for India to provide policy support to ensure the country remains competitive internationally. Though the final list of products eligible for the scheme is yet to be notified, it is expected that most of the top globally traded man-made fibre product lines in which India's share is less than 5% will be covered.

How will it impact traditional textiles such as jute?

The scheme will not impact traditional textile segments such as jute or cotton. It has minimum investment thresholds and select product lines and hence targets a limited number of players. The traditional segments have a large number of industries spread across micro, small and medium enterprises and large-scale operations. They will continue to invest and grow in the fields they are strong in.

Will the scheme help lower dependence on imports?

During 2018-19, the import of man-made fibre garments jumped 39% from the previous year, while the import of the man-made fibre yarn, fabrics, and made-ups rose 16%. With the government recently removing the **Anti-Dumping Duty On Viscose Staple Fibre and Purified Terephthalic Acid, Most Man-Made Fibre** is now available in India at internationally competitive prices. With an incentive to invest in production too, Indian manufacturing of man-made fibre value-added products is expected to increase and thus bring down imports, especially of man-made fibre apparel and fabrics, from countries such as China and Bangladesh.

What lies ahead?

The government has said the scheme will help attract ₹19,000 crore of fresh investments and generate 7.5 lakh jobs. The expectation is that it will motivate industries to make fresh investments in the select product lines and scale up capacities. Global retail brands, which are present in India and sourcing man-made fibre-based apparel from other countries, are likely to start sourcing from India once the garments become available at internationally competitive prices.

14 NEERI TRANSFERS RT-PCR TECH TO MSME MINISTRY

The Nagpur-based **National Environmental Engineering Research Institute (NEERI)** has transferred the know-how of indigenously developed **Saline Gargle RT-PCR technique** to the Ministry of Micro, Small & Medium Enterprises (MSME) for commercialising it, a statement said on Sunday.

The Saline Gargle RT-PCR technology is simple, fast, cost-effective, patient-friendly and comfortable. It also provides instant test results and is well-suited for rural and tribal areas, given minimal infrastructure requirements, the Institute said. NEERI is **an institute under the Council for Scientific and Industrial Research (CSIR)**.

“The know-how has been transferred to the Union Ministry of Micro, Small & Medium Enterprises (MSME), on a non-exclusive basis. This would enable the innovation to be commercialised and licensed to all capable parties, including private, government and various rural development schemes and departments,” the statement added. The licensees are expected to set up manufacturing facilities for commercial production in the form of easily usable compact kits.

In the light of the prevailing pandemic situation and probable third wave of COVID-19, CSIR-NEERI fast-tracked the know-how transfer process to potential licensees for its wider dissemination across the nation.

The ceremonial transfer of the Standard Operating Procedure and know-how of the Saline Gargle RT-PCR technique was done in the presence of Union Minister Nitin Gadkari on September 11. “The Saline Gargle RT-PCR method needs implementation across the nation, especially in resource-poor regions like rural and tribal areas. This would result in faster and more citizen-friendly testing and will strengthen our fight against the pandemic,” Mr. Gadkari said.

The MSME unit had approached CSIR-NEERI for commercialising the Saline Gargle RT-PCR technology developed by CSIR-NEERI, he added.

15 NCAER HEAD PREDICTS 10% GROWTH

The Indian economy is expected to grow around 10% during the current financial year on the likelihood of fewer COVID-linked supply disruptions and buoyancy in the global economy, said Poonam Gupta, Director General of the **economic think tank**, the **National Council of Applied Economic Research (NCAER)**. The real challenge, however, would be to sustain a growth rate of 7-8% in the years to come, Ms. Gupta said.

“We could see annual growth in the ballpark range of about 10%. The reasons for this perceived optimism are: fewer supply disruptions; increased pent-up demand in the traditional and contact-intensive services; and a buoyant global economy,” she said.

“Even so, if two pandemic years are taken together, there would be a very small net growth. In other words, the economy at the end of 2021-22 would be only slightly larger than at the end of 2019-20,” she said.

16 INDIA - \$3.5 BLN REVISED CLEAN TECH SCHEME FOR AUTOMAKERS

India will give about \$3.5 billion in incentives to auto companies over a five-year period under a revised scheme to boost the manufacturing and export of clean technology vehicles, two sources aware of the latest proposal told Reuters.

The government's original plan was to give about \$8 billion to automakers and part manufacturers to promote mainly gasoline technology, with added benefits for electric vehicles (EVs).

The scheme was redrawn to focus on companies that build electric and hydrogen fuel-powered vehicles.

It was not immediately clear why the allocation had been revised, but one of the sources said that since the focus had changed to clean and advanced technology fewer companies would be eligible for the incentives.

India sees clean auto technology as central to its strategy to reduce its oil dependence and cut the debilitating pollution in its major cities, while also meeting **its emissions commitment under the Paris Climate Accord.**

Domestic automaker **Tata Motors is the largest seller of electric cars in India**, with rival Mahindra & Mahindra and motor-bike companies TVS Motor and HeroMoto Corp firming up their EV plans. India's biggest carmaker, Maruti Suzuki, has no near-term plan to launch EVs as it does not see volumes or affordability for consumers.

Details of the scheme, part of India's broader \$27 billion programme to attract global manufacturers, could be made public as early as next week, the two sources said. Under the revised scheme, companies that qualify will get cashback payments equivalent to around **10%-20% of their turnover for EVs and hydrogen fuel cell cars**, one of the sources said.

Carmakers would need to invest a minimum of about \$272 million over five years to qualify for the payments. Auto parts makers will get incentives to produce components for clean cars and for investing in safety-related parts and other advanced technologies like sensors and radars used in connected vehicles.

17 COVID -19 HAS 'DEVASTATING' IMPACT ON FIGHT AGAINST HIV, TB, MALARIA: GLOBAL FUND

The COVID-19 pandemic had a 'devastating' impact on the fight against HIV, tuberculosis and malaria in 2020, according to a report released by the Global Fund. "To mark our **20th anniversary**, we had hoped to focus this year's report on the extraordinary stories of courage and resilience that made possible the progress we have achieved against HIV, TB and malaria over the last two decades," said Peter Sands, the Global Fund's executive director.

"But the 2020 numbers force a different focus. They confirm what we feared might happen when COVID-19 struck," he said. "The impact of COVID-19 on the fight against HIV, TB and malaria and the communities we support has been devastating. For the first time in the history of the global fund, key programmatic results have gone backwards."

There were "significant" declines in HIV testing and prevention services, the fund said. Compared with 2019, the number of people reached with **HIV prevention and treatment dropped by 11% 2020**, while HIV testing dropped by 22%, holding back new treatment in most countries.

Nevertheless, the number of people who received life-saving antiretroviral therapy for HIV in 2020, rose by 8.8% to 21.9 million "despite COVID-19".

The impact of the coronavirus pandemic on the **fight against TB worldwide** had similarly been “catastrophic”, the report said. The number of people treated for drug-resistant TB in the countries where the Global Fund invests dropped by “a staggering” 19 percent, with those on treatment for extensively drug-resistant TB registering an even bigger drop of 37 percent, it said.

The fund calculated that **around 4.7 million people were treated for TB** in 2020, around one million fewer than in 2019. Interventions to combat malaria “appear to have been less badly affected by COVID-19 than the other two diseases,” the report found.

“Thanks to adaptation measures and the diligence and innovation of community health workers, prevention activities remained stable or increased compared to 2019.” The number of mosquito nets distributed increased by 17 percent to 188 million and structures covered by indoor residual spraying increased by three percent.

Nevertheless, **THE GLOBAL FUND** - which **brings together governments, multi-lateral agencies, bilateral partners, civil society groups**, people affected by the diseases and the private sector - said that its “rapid and determined response to Covid-19 prevented an even worse outcome”.

In 2020, the fund disbursed \$4.2 billion to continue the fight against HIV, TB and malaria and approved an additional \$980 million in funding to respond to COVID-19. The Global Fund said that since it **was set up in 2002**, it has **saved 44 million lives** and the number of deaths caused by AIDS, TB and malaria decreased by 46 percent in countries where it invests.

18 THE ECONOMIC REFORMS - LOOKING BACK TO LOOK AHEAD

The crisis caused by the novel coronavirus pandemic in the country and at global level has led to a debate about fresh thinking and new approaches to manage the economy and the future of humanity. Globally, it has underscored the need for policies to enable resilience in the economy and ensure a robust health system, together with research and development. In India, various efforts are under way to enhance economic growth.

A CRITICAL READING OF REFORMS

History matters in the complex economic system. So, it is important to briefly look at the economic reforms of the last 30 years. Evidence shows that the economic reforms which were launched in a major way in 1991 - and from time to time, subsequent interjections for liberalisation of economy and trade - have enabled some credible gains for the country. Over a period of 30 years, burgeoning foreign exchange reserves, sustained manufacturing contribution in GDP, increased share in global exports (from a mere 0.6% in the early 1990s to 1.8%), robust information and communication technology software exports, and sustained economic growth in the range of 6%-8% are clear hallmarks of success.

The economic reforms, so far, have been more focussed on the technical nature of the economy than the system, process and people. As a result, quite a few primary drivers of the economy -

1. Human Capital.
2. Technology Readiness.
3. Labour Productivity.
4. Disposable Income.
5. Capital Expenditure.
6. Process Innovation

In Setting Up Businesses, and institutional capacity - have not got enough recognition. In the context of a global competitive environment, some basic issues deserve close examination.

The human resource capital (HRC) formation, a good determinant of labour productivity, has been found wanting over the entire period of reforms.

1. The lack of quality education.
2. Low skilled manpower
3. Inadequacies in basic health care have resulted in low HRC.

The HRC rank for India stands at 103; Sri Lanka is at 70, China at 34, and South Korea at 27, as brought out by the Global Human Capital Report, 2017.

As indicated in the World Bank database on GDP for 2019, the low per capita GDP in India, at \$2,104 (at \$6,997 in PPP terms, ranked 125th globally) against the world average of \$11,429 (at \$17,678 in PPP terms) has direct links to low per capita family income. Closely linked, the report by Deloitte (Global Manufacturing Competitiveness Index in 2016) reflects that the hourly wages in India have been \$1.7; they are \$38, \$24, \$20.7 and \$3.3 for the United States, Japan, South Korea, and China, respectively. Low wages have a direct bearing on the disposable income of families and leave little room for the majority of households to have enough disposable income to purchase consumer durables or industrial products, affecting demand.

Low research and development expenditure at 0.8% of GDP, vis-à-vis higher value for other fast emerging economies such as **South Korea (4.5%), China (2.1%) and Taiwan (3.3%)**, is resulting in lower capacity for innovation in technologies and reduced 'technology readiness', especially for manufacturing.

LABOUR PRODUCTIVITY

The lack of HRC and low technology readiness have impacted labour productivity adversely. In India, labour productivity in manufacturing is less than 10% of the advanced economies including **Germany and South Korea**, and is about 40% of China, as reflected in a World Bank publication of 2018, The Future of Manufacturing-Led Development . Low productivity has unfavourable consequences for competitiveness, manufacturing growth, exports and economic growth.

In addition, due to a lack of capital expenditure and institutional capacity, and inefficiency in business service processes, there are difficulties in acquiring land for businesses, in efficient utilization of economic infrastructure, and in providing business services, leading to a long time and more cost in setting up enterprises, resulting in a loss of creative energy of entrepreneurs.

The fundamental deficiencies, as highlighted above, are at the heart of the problem. For years, the economy has been hit internally due to low consumer demand as a result of low household incomes as well as externally on account of lesser competitiveness and inadequacies in integration with global supply chains for trade. A Business as Usual (BAU) approach is resulting in diminishing returns.

PARADIGM SHIFT

In order to drive the economy, there needs to be fresh thinking to address the underlying issues comprehensively in an integrated manner. The new reforms will require a distinct departure. The approach should be systemic and address structural issues — HRC, skills, research and development (R&D), land management and institutional capacity. The focus should be on quality of business services, technology readiness, labour productivity and per capita income.

1. To attract large investment in manufacturing and advanced services, at a basic level, investment in human capital and technology is a prerequisite. Raising HRC by way of enhanced public sector outlay to 8% of GDP, from current about 5%, for education, skill development (including for advanced technologies) and public health, is another first step. The reports (by McKinsey and the World Economic Forum) on advanced manufacturing suggest that Industry 4.0 will be defined by new technologies such as robotics, 3-D printing, artificial intelligence (AI), the Internet of things (IoT), etc., which could usher in rapid changes of a higher order up to 10X or more in speed, scale and scope; technology obsolescence will be much faster than ever

before. Consequently, efforts for technology readiness are very essential to stay competitive. It demands enhancing public research and development expenditure to 2% of GDP over the next three years.

2. There is a need to work on strategies to enhance per capita income by more wages for workers through higher skills and enhancing minimum wages, besides improving the social security net. This calls for a concerted calibrated approach through collaborative efforts of government, industry and workers' unions.

3. On the issue of increased cost of labour, it can be compensated by higher productivity, some tax-benefits in the initial period of wage reforms especially for Micro, Small and Medium Enterprises, besides reducing transaction costs in business and improving infrastructure utilisation efficiency.

SYSTEMIC APPROACH

Using insights from the work of **Nobel laureate (1993) Douglass C. North** on the role of institutions in advancing the economy in a country, it is necessary to build the capacity of public institutions to create a good environment for business and industry. The process of reforms is as important as the content. Policy reforms should lay an emphasis on process innovation and promote a business-centric approach to implementing pre-determined service quality levels (SQLs), to create a friendly ecosystem by having a state-of-the-art plug-and-play model for new enterprises, and for efficient internal supply chain management to integrate with the global supply chain.

In sum, it necessitates a systemic approach - encompassing inter-connected basic factors of the economic system - for policy reforms for setting the economic fundamentals right, in order to unlock creativity and innovation in the economic system, raise the **total factor productivity (TFP)**, or a measure of productive efficiency, and to achieve higher growth.

19 CROSS-BORDER FUND TRANSFER

Integration to aid instant fund transfer

The **Reserve Bank of India (RBI)** and the **Monetary Authority of Singapore (MAS)** announced a project to link their respective fast payment systems - Unified Payments Interface (UPI) and PayNow - to facilitate instant, low-cost, cross-border fund transfer.

The linkage is targeted to be operationalized by July 2022. "The UPI-PayNow linkage will enable users of each of the two fast payment systems to make instant, low-cost fund transfers on a reciprocal basis without a need to get onboarded onto the other payment system," the RBI said in a statement.

"The **UPI-PayNow linkage** is a significant milestone in the development of infrastructure for cross-border payments between India and Singapore, and closely aligns with the **G20's financial inclusion priorities** of driving faster, cheaper and more transparent cross-border payments," the RBI said.

The linkage builds upon the earlier efforts of **NPCI International Private Ltd. (NIPL)** and **Network for Electronic Transfers (NETS)** to foster cross-border interoperability of payments using cards and QR codes, between India and Singapore and will further anchor trade, travel and remittance flows between the two countries, the RBI said.

WHAT IS

PERSON TO PERSON (P2P)?

PERSON TO MERCHANT (P2M)?

This initiative is also in line with RBI's vision of reviewing corridors and charges for inbound cross-border remittances outlined in the Payment Systems Vision Document 2019-21, it added. **UPI is India's mobile based**, 'fast payment' system that facilitates customers to make round the clock payments instantly using a **Virtual Payment Address (VPA)** created by the customer.

This eliminates the risk of sharing bank account details by the remitter. UPI supports both **Person to Person (P2P)** and **Person to Merchant (P2M)** payments as also it enables a user to send or receive money. PayNow is the **fast payment system of Singapore** which enables peer-to-peer funds transfer service, available to retail customers through participating banks and Non-Bank Financial Institutions (NFIs) in Singapore. It enables users to send and receive instant funds from one bank or e-wallet account to another in Singapore by using just their mobile number, Singapore NRIC/FIN, or VPA.

20 RAIL LINK WITH KASHMIR IN 2024

Union Railway Minister Ashwini Vaishnaw promised that rail link with the Kashmir Valley would be **open to the public before 2024**.

He said systematic surveys are being undertaken to link the remotest regions of the country through mobile and internet connectivity. Mr. Vaishnaw, who visited the Jammu railway station and a **Community Service Centre (CSC)** here, took stock of the facilities being provided to the public. His visit is part of the public outreach initiative of the Union government for Jammu and Kashmir.

The Railway Minister assured that rail link with Kashmir would be open to the public before 2024, the spokesperson said. He also inspected the Jammu railway station and studied the upgradation plan for the Jammu and Kathua railway stations. Mr. Vaishnaw assured that appropriate steps would be taken to facilitate pilgrims and tourists reaching Jammu and beyond through the railways. Former Railway Minister Piyush Goyal had set the target for completion of the **Katra-Qazigund track project** by 2022.

"Reviewed the progress of **Udhampur Srinagar-Baramulla Rail Link project** in Jammu and Kashmir and deliberated ways for early execution. The project will be completed by 2022 and will facilitate ease of transport for the people of Jammu and Kashmir," Mr. Goyal had tweeted.

The 272-km railway line is being undertaken at an estimated cost of ₹ 28,000 crore by the northern railway. Mr. Gangal said that the first section connecting Udhampur to Katra and the third section between Banihal and Baramulla have been completed with both the sections operational. The work to complete the most difficult Katra-Banihal section is going as per schedule, he added.

21 CHINA'S HEBEI PROVINCE TO CLAMP DOWN ON CRYPTOCURRENCY MINING AND TRADING

The cyberspace commission in China's northern Hebei province said it will cooperate with other government departments to crack down on virtual currency mining and trading, the latest move in the country's cryptocurrency crackdown.

The province's educational department, public security department, local financial regulatory bureau, and communications administration will also participate in the crackdown, the commission's statement said.

"Cryptocurrency mining consumes an enormous amount of energy, which is against China's **'carbon neutral' goal**," the statement said, adding that it also carries huge financial risks.

In May, China's State Council, or cabinet, vowed to **crackdown on bitcoin mining and trading**, escalating a campaign against cryptocurrencies days after three industry bodies banned crypto-related financial and payment services.

The commission said that before Sept. 30, those departments should check the information systems they are using, to avoid the use of any computing power to engage in the illegal mining of virtual currencies. It added that they should step up the collection of information from whistleblowers and the general public. From October it will regularly monitor the sector and punish those who flout the rules.

Voice-based financial transaction:

Voice-based financial transaction is soon going to become a reality as the **Reserve Bank has given approval to ToneTag**, a hardware-agnostic sound wave tech solutions provider, for such payments.

ToneTag has completed **the first cohort under the Reserve Bank of India (RBI)** sandbox for retail payments. Testing was done in rural and urban areas in Karnataka and Bihar, involving transactions up to ₹1,000.

ToneTag has successfully executed offline voice-based payments via feature phones and smart phones in areas with inconsistent internet connectivity, it said in a release. It further noted that "the technology is already in place, we have received the approval from the RBI, now the regulated entities can easily adopt this technology."

It will benefit the people who are digitally not savvy or find it difficult to use apps for banking or payments, thereby making digital payments a reality for all, the company said, adding that the voice-based retail payment technology is now ready for adoption by the service providers.

With the successful completion of the cohort, ToneTag is now poised to enable digital payments for more than 600 million feature phone users, it said. It will also offer a secure and seamless payment experience for smartphone users who are not digital savvy.

The Bengaluru-based company said it has ensured that the technology is easy to use and understand. "Through this technology, ToneTag is set to drive financial inclusion across geographies and make digital payments convenient and available for everyone with a mobile phone, any make or model," it said.

ToneTag said it has received multiple Indian and global patents, giving it IP moat for scale up in India and other geographies. It has also launched **RetailPods**, a device that allows retailers or other vendors to accept payments through any feature or smart phone and receive voice-based acknowledgement or payment confirmation.

The Indian drone industry will have a total turnover of up to **₹15,000 crore by 2026** as the government has given a major boost to the sector with the production-linked incentive (PLI) scheme announced and liberalised rules implemented, Civil Aviation Minister Jyotiraditya Scindia.

The Civil Aviation Ministry approved a **PLI scheme for drones and drone components** with an allocation of ₹120 crore spread over three financial years. The PLI scheme comes as a follow-through of the liberalised Drone Rules, 2021.

In the press briefing, **"With Drone Policy (Rules) and Drone PLI scheme**, we have an aim that drone manufacturing companies in India should reach a turnover of **₹900 crore in the coming three years.**" Currently, Indian drone manufacturing companies have a turnover of approximately ₹80 crore, he mentioned.

He said the three parts of the entire value chain in the drone sector are hardware (drone manufacturer), software and service delivery. "If you combine turnover of all three parts of the drone sector, it is our estimate that by 2026, it will stand at \$1.8 billion. This means that this industry will have a turnover of approximately **₹12,000-₹15,000 crore** by then," he stated.

Under the PLI scheme, the incentive for a manufacturer of drones and drone components will be 20% of the value addition made by the company during the next three years. The value addition should be calculated as the annual sales revenue from drones and drone components (net of GST) minus the purchase cost (net of GST) of drone and drone components, it stated.

24 U.N - INDIA EXPECTED TO GROW AT 7.2% IN 2021

India is expected to grow at 7.2 per cent in 2021 but economic growth could decelerate next year, according to a United Nations report which said the recovery in the country is constrained by the ongoing human and economic cost of the COVID-19 pandemic and the negative impact of food price inflation on private consumption.

The **UNCTAD Trade and Development Report 2021**, released, sounded a cautiously optimistic note to say that the global economy is set for a strong recovery in 2021, albeit with a good deal of uncertainty clouding the details at the regional and country levels over the second half of the year.

After a 3.5 per cent fall in 2020, the **United Nations Conference on Trade and Development (UNCTAD)** expects world output to grow 5.3 per cent this year, partially recovering the ground lost in 2020. The report said that India "suffered a contraction" of 7 per cent in 2020 and is expected to grow 7.2 per cent in 2021. "The recovery in India is constrained by the ongoing human and economic cost of COVID-19, and the negative impact of food price inflation on private consumption," the UNCTAD report said.

The report projects that India will clock an economic growth of 6.7 per cent in 2022, slower than the country's expected 2021 growth rate. However, even with a slower growth rate of 6.7 per cent, India will still be the fastest-growing major economy in the world next year.

Challenges:

"India, which experienced a contraction of 7.0 per cent in 2020, showed a strong quarterly growth of 1.9 per cent growth in the first quarter 2021, on the back of the momentum of the second half of 2020 and supported by government spending in goods and services," the report said. "Meanwhile, a severe and broadly unanticipated second wave of the pandemic, compounded by bottlenecks in the vaccine roll out, hit the country in the second quarter, on top of rising food and general price inflation, forcing widespread lockdowns and drastic consumption and investment adjustments," it said.

It noted that income and wealth inequalities in the country have widened, and "social unrest has increased". The Central Bank estimates another sharp contraction (quarter-on-quarter) in the second quarter followed by a rebound afterwards. "Given the inherent fragilities in coping with the pandemic and restoring employment and incomes, growth in 2021 as a whole is estimated at 7.2 per cent, insufficient to regain the pre-COVID-19 income level," the report said.

Further, it said that in India, consumer inflation was already at 6 per cent before the pandemic. The COVID-19 shock caused a temporary dip in prices, but as the economy recovered and food prices accelerated, the country returned to a 6 per cent inflation rate in mid-2021. The UNCTAD said that global growth is expected to hit 5.3 per cent this year, the fastest in almost half a century, with some countries restoring - or even surpassing - their output level of 2019 by the end of 2021.

"The global picture beyond 2021, however, remains shrouded in uncertainty," it said, adding that looking ahead, the UNCTAD expects world output to grow 3.6 per cent in 2022. South Asia suffered a sharp contraction of 5.6 per cent in 2020, with the region's economic activity brought to a halt thanks to widespread restrictions.

Deficient public healthcare systems and high levels of informality magnified the impact of the pandemic in terms of both health and economic outcomes, which was reflected in a stark rise in poverty rates, the report said.

The UNCTAD expects the region to expand by 5.8 per cent in 2021, with the more vigorous recovery signalled at the beginning of the year muted by a rapid surge in infections during the second quarter of 2021. Moreover, the limited progress made in terms of vaccine rollouts continues to leave the countries of the region susceptible to future outbreaks. For 2022, the UNCTAD expects the region's growth rate to moderate to 5.7 per cent.

THE U.S.A. FORECAST

The US is projected to grow at 5.7 per cent in 2021 followed by a three per cent GDP growth next year. "In the Americas, the fast recovery in the United States recovery is expected to raise GDP to 2 per cent above its pre-COVID-19 level," it said.

China, estimated to grow at 8.3 per cent this year, will see its growth slow down to 5.7 per cent in 2022. The report said that the world needs more effective multilateral coordination, without which recovery efforts in advanced countries will damage development prospects in the South and amplify existing inequalities.

"The global recovery from the pandemic must reach beyond emergency spending and infrastructure investments to embrace a reinvigorated multilateral model for trade and development," said Rebeca Grynszpan, the secretary-general of the UNCTAD. "Only a concerted rethinking of priorities holds out hope of addressing the inequality and climate crises that have come to define our era."

25 WORLD BANK DISCONTINUES DOING BUSINESS REPORT

The World Bank Group said it has decided to discontinue publication of its "Doing Business" rankings of country business climates after a review of **data irregularities** in the 2018 and 2020 reports.

In a statement, the World Bank said that after the irregularities raised ethical matters involving former bank staff and board officials, the development lender will work on a new approach to assessing countries' business and investment climates.

26 WHY HAS THE MSP FOR OILSEEDS BEEN SIGNIFICANTLY INCREASED?

The **Union government announced higher Minimum Support Price (MSP) for rabi crops** to boost their production. Notably, crops such as oilseeds and pulses have witnessed a higher percentage rise in their MSP when compared to major crops such as wheat.

Is the move aimed at ending dependence on imports?

The prices of edible oils such as palm oil, sunflower oil, mustard oil etc. have increased by well over 50% in the last one year. This **price rise has been attributed mainly to labour shortages and crop failures** in major edible oil-producing nations such as **Indonesia, Malaysia, Argentina, and Ukraine**. The government thus hopes to cut down India's dependence on foreign oil imports by boosting domestic production, and protect Indian consumers from price shocks due to global factors.

At the moment, over 60% of India's edible oil needs are met through imports. In order to boost domestic production, the MSP for rapeseed and mustard seed has been increased by as much as 8% in contrast to a mere 2% increase in the MSP for a major crop like wheat.

It is also worth noting that the Centre had last month announced the **National Edible Oil Mission** worth ₹11,040 crore to encourage the domestic production of palm oil. Palm oil is a major ingredient in the food industry and represents a significant share of India's overall imports.

WILL IT OFFER IMMEDIATE BENEFITS?

The greater percentage increase in the support prices for oil seeds when compared to that of other crops could increase the amount of land and other resources used to cultivate oil seeds. But it is unlikely to offer immediate benefits in terms of higher domestic production of oil seeds and lower edible oil prices for consumers. Farmers say that it takes at least four years for certain freshly sown oil crops such as the palm oil crop to yield increased output. However, if these measures can help improve oilseed supply in the long run, they can indeed benefit consumers. There could also be other crucial factors that might play a role in the success of the Centre's plan.

For one, the price that farmers get paid for their crops is often well below the MSP. So the actual implementation of the MSP programme will be the key. Further, the cost of producing oil seeds may vary significantly from that of other crops, so production will depend not just on the MSP but on the expected returns from different crops.

IS A HIGHER MSP NECESSARY TO BOOST OIL SEED PRODUCTION?

A higher support price for any crop can potentially increase its production as it offers farmers more financial incentive to cultivate it. However, many believe that the price and supply of edible oils is adversely affected by factors beyond just the lack of sufficient domestic supply.

Import taxes are considered a major culprit behind the high edible oil prices. Oils such as soya bean oil and sunflower oil are taxed at around 30% today while their refined varieties are taxed at around 40% even after the Centre slashed import taxes last week. So the increase in the support price for oil seeds and the National Edible Oil Mission are seen more as efforts to encourage domestic production under the Atma Nirbhar plan to attain self-sufficiency.

It should also be noted that there may be genuine economic reasons for edible oils to be produced predominantly in certain countries and not in others. If so, the mere volatility in the price of imported edible oils may not be a good enough reason to subsidise domestic production.

27 WTO'S AGRI PACT TILTED AGAINST DEVELOPING COUNTRIES

The Agreement on Agriculture at the WTO is riddled with deep imbalances, which favour the developed countries and have tilted the rules against many developing countries.

The Minister said that historical asymmetries and imbalances must be corrected to ensure a rule-based, fair and equitable order. Mr. Goyal said this while addressing the **G-33 Virtual Informal Ministerial Meeting**. Out of a total of 47 G-33 members, representatives from 21 countries, including India, took the floor to make the brief intervention.

Mr. Goyal said G-33 must strive for positive outcomes on a permanent solution to public stockholding for food security purposes, which was of utmost importance, finalisation of a **Special Safeguard Mechanism (SSM)** quickly, and a balanced outcome on domestic support.

The Minister urged the members to work collectively to retain the cohesion of the **G-33 coalition** and strengthen it further by reaching out to other like-minded developing groups to secure their support for a fair, balanced and development-centric outcome on agriculture at the 12th conference in Geneva. The meeting concluded with the adoption of the G-33 joint ministerial statement reaffirming commitment for expeditious resolution of the WTO's mandated issues in agriculture.

The head of the United Nations, Warning of a potential new Cold War, implored China and the United States to repair their “completely dysfunctional” relationship before problems between the two large and deeply influential countries spill over even further into the rest of the planet.

U.N. Secretary-General Antonio Guterres spoke to The Associated Press this weekend ahead of this week's annual United Nations gathering of world leaders — a convening blemished by COVID, climate concerns and contentiousness across the planet.

Mr. Guterres said the **world's two major economic powers** should be cooperating on climate and negotiating more robustly on trade and technology even given persisting political fissures about human rights, economics, online security and sovereignty in the South China Sea.

“We need to re-establish a functional relationship between the two powers,” he said, calling that “essential to address the problems of vaccination, the problems of climate change and many other global challenges that cannot be solved without constructive relations within the international community and mainly among the superpowers.”

We need to avoid at all cost a Cold War that would be different from the past one, and probably more dangerous and more difficult to manage,” Mr. Guterres said.

The so-called Cold War between **the Soviet Union and its East bloc allies and the United States and its Western allies** began immediately after World War II and ended with the breakup of the Soviet Union in 1991. It was a clash of two nuclear-armed superpowers with rival ideologies - communism and authoritarianism on one side, capitalism and democracy on the other.

The U.N. chief said a new Cold War could be more perilous because the Soviet-U.S. antipathy created clear rules, and both sides were conscious of the risk of nuclear destruction. That produced back channels and forums “to guarantee that things would not get out of control,” he said.

He said the U.S.-Britain deal to give Australia nuclear-powered submarines so it could operate undetected in Asia “is just one small piece of a more complex puzzle ... this completely dysfunctional relationship between China and the United States.” The secretly negotiated deal angered **China and France**, which had signed a contract with Australia worth at least \$66 billion for a dozen French conventional diesel-electric submarines.

The secretary-general also addressed three major issues that world leaders will be confronting this week:

1. The worsening climate crisis.
2. The still-raging pandemic.
3. Afghanistan's uncertain future under its new Taliban rulers.

Role of United Nations have in the new Afghanistan?

Mr. Guterres called it “a fantasy” to believe that U.N. involvement “will be able all of a sudden to produce an inclusive government, to guarantee that all human rights are respected, to guarantee that no terrorists will ever exist in Afghanistan, that drug trafficking will stop.” After all, he said, the United States and many other countries had thousands of soldiers in Afghanistan and spent trillions of dollars and weren't able to solve the country's problems - and, some say, made them worse.

While former U.S. president Donald Trump was wedded to an “America First” policy, President Joe Biden - who will make his first appearance as chief executive at the General Assembly's high-level meeting Tuesday - has reaffirmed U.S. commitment to multilateral institutions.

He said there is “a completely different environment in the relationship” between the United Nations and the United States under Biden. But, Mr. Guterres said, “I did everything - and I'm proud of it - in order to

make sure that we would keep a functional relationship with the United States in the past administration."Mr. Guterres also lamented the failure of countries to work together to tackle global warming and ensure that people in every country are vaccinated.

Mr. Guterres called it "totally unacceptable" that 80% of the population in his native Portugal has been vaccinated while in many African countries, less than 2% of the population is vaccinated."It's completely stupid from the point of view of defeating the virus, but if the virus goes on spreading like wildfire in the global south, there will be more mutations," he said. "And we know that mutations are making it more transmissible, more dangerous."

He again urged the **world's 20 major economic powers in the G20**, who failed to take united action against COVID-19 in early 2020, to create the conditions for a global vaccination plan. Such a plan, he said, must bring together vaccine-producing countries with international financial institutions and pharmaceutical companies to double production and ensure equitable distribution.

29 COFFEE ACT WILL BE SIMPLIFIED

The Union Commerce and Industry Minister Piyush Goyal has said that he would discuss the implementation of the **Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI)** Act with other Ministries to address the concerns of coffee growers losing their land.

Interacting with coffee growers, roasters, exporters and other stakeholders of the coffee industry at Coffee Board in Bengaluru, the Minister said that **the present Coffee Act, enacted in 1942**, has many provisions that have become redundant and are impeding coffee trade. It has been decided to look again at the provisions of the Act to remove those provisions that are restrictive and regulatory in nature, so as to bring in a simple Act that suits the present needs of the coffee sector and facilitates its growth, an official release said.

CHALLENGES FACED:

On the SARFAESI Act, while many coffee growers expressed concerns about losing their land in view of the notices issued by banks, the Minister assured the grower fraternity that the issue would be favourably discussed with other related ministries and a suitable solution found soon. When the Coffee Board requested the Minister to announce restructuring of all existing loans into a single-term loan with long repayment period and to also extend fresh working capital with soft interest, Mr. Goyal expressed his solidarity with the coffee growers in this period of distress. He promised to work out a feasible package with the ministries concerned, the release stated.

Mr. Goyal also said that there was a **proposal to shift the Coffee Board from the Commerce Ministry to the Agriculture Ministry** to ensure that benefits of all schemes of agriculture are extended to the coffee growers. He also directed the board to develop a dashboard for real-time update of extension activities, including field visits, workshops, and demonstrations to effective monitoring. The Minister also said that a request would be made to the Agriculture Department and the Indian Council of Agricultural Research to **initiate advanced research on coffee white stem borer**.

30 INDIAN AUTOMOBILE INDUSTRY ATTRACTED HUGE INVESTMENTS: ARUN GOEL

Arun Goel, Secretary, Union Ministry of Heavy Industries said the Indian automobile industry is encouraging and a success story and has attracted huge investments, while replying to a question on the U.S. auto major Ford's decision to shut shop in the country and whether it is a setback to India.

"The **Indian auto industry has got \$34.5 billion investment** in the five years preceding the COVID. If the Indian auto ecosystem was not attractive, why would that investment have come in?" he quipped at a press conference in Chennai.

Mr. Goel also pointed out excluding the pandemic period, Indian auto industry domestic sales and **exports have grown at a compounded annual growth rate of 8-10%** in the last five years and jobs have been created.

He interacted with the industry players in Chennai on the **Production Linked Incentive (PLI) Scheme** for the automobile industry rolled out by the Centre.

To a question on whether the government would ask Ford to reconsider its decision after the announcement of the PLI scheme, Mr. Goel said the government rolls out schemes for the industry and not a particular player.

“We are offering a level playing and attractive field when compared to anywhere in the World. Our role is that of a facilitator and we want to attract investments through the PLI scheme. It’s up to each company to decide how they fit in based on their corporate strategy,” he added.

Mr. Goel said the PLI scheme envisages manufacturing of Advanced Automotive Technology products in India and it will cover all sectors of the industry. “We have asked the auto industry to give us a list of products which are being consumed and not being made in India because either the supply chain is absent or weak. We have asked them to provide details like data on import/export. Our experts will scrutinise the details and we will notify the eligible products,” he added.

31 WHAT IS NET ZERO AND WHY IS IT DIFFICULT FOR INDIA TO ACHIEVE IT?

India is currently at the risk of becoming an outcast **on matters related to climate action**. This is because it has not yet committed to a net zero target year.

The **Paris Agreement** underlines the need for net zero, requiring states to ‘**achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century**’. Over 50% of the global economy has already committed to net zero by 2050.

WORLD COUNTRIES NET ZERO TARGET?

China is the world's largest carbon emitter and has announced that a net zero target for 2060.

The U.S., as the second biggest emitter with large historical emissions, returned to the Paris Agreement with an ambitious 2050 net zero plan and said that it will decarbonise its power sector by 2035. **The European Union member-states have committed themselves to reducing emissions by at least 55% by 2030 over 1990 levels**. But the world's third-largest emitter India has neither announced the net zero year nor has it submitted an updated climate plan to the UN, with raised carbon-reduction ambition, as required by the Paris agreement every five years.

32 EU PLANS TO LEGISLATE FOR COMMON PHONE CHARGER

The European Commission will present a legislative proposal for a common charger for mobile phones, tablets and headphones, a person familiar with the matter said - a move likely to affect iPhone maker Apple more than its rivals.

The European Union executive and EU lawmakers have been pushing for a common charger for over a decade, saying it would be **better for the environment** and more convenient for users.

The Commission wants the sale of chargers to be decoupled from devices, and also propose a harmonised charging port, the person said.

Apple, whose iPhones are charged from its Lightning cable, has said rules forcing connectors to conform to one type could deter innovation, create a mountain of electronic waste and irk consumers.

Rival Android-based devices are charged using USB-C connectors. Half the chargers sold with mobile phones in 2018 had a USB micro-B connector, while 29% had a USB-C connector and 21% a Lightning connector, according to a 2019 Commission study.

33 WHO TIGHTENS GLOBAL AIR QUALITY NORMS

The **World Health Organisation (WHO)** in its first-ever update since 2005 has tightened global air pollution standards in a recognition of the emerging science in the last decade that the **impact of air pollution on health** is much more serious than earlier envisaged.

The move doesn't immediately impact India as the **National Ambient Air Quality Standards (NAAQS)** don't meet the WHO's existing standards. The government has a dedicated **National Clean Air Programme** that aims for a 20% to 30% reduction in particulate matter concentrations by 2024 in 122 cities, keeping 2017 as the base year for the comparison of concentration. These are cities that don't meet the NAAQS when calculated from 2011-2015. However, experts say the WHO move sets the stage for eventual shifts in policy in the government towards evolving newer stricter standards.

"This will soon become part of policy discussions - much like climate targets to reduce greenhouse gas emissions keep getting stricter over time - and once cities and States are set targets for meeting pollution emission standards, it could lead to overall changes in national standards," said a senior official, who's part of a high level commission to monitor air quality standards.

The **upper limit of annual PM2.5 as per the 2005 standards**, which is what countries now follow, is 10 microgram per cubic metre. That has now been revised to five microgram per cubic metre.

The 24-hour ceiling used to be 25 microgram but has now dropped to 15. The PM10, or particulate matter of size exceeding 10 microgram, upper limit is 20 microgram and has now been revised to 15 whereas the 24-hour value has been revised from 50 to 45 microgram.

34 STANDARDS FOR A HOST OF CHEMICAL POLLUTANTS

India's NAAQs - last revised in 2009 - specify an annual limit of 60 microgram per cubic metre for PM 10 and 100 for a 24-hour period. Similarly it's 40 for PM 2.5 annually and 60 on a 24-hour period. There are also standards for a host of chemical pollutants including sulphur dioxide, lead and nitrogen dioxide.

Environmental organisation **Greenpeace** in a statement said the new guidelines meant that among 100 global cities, Delhi's annual PM2.5 trends in 2020 was 16.8 times more than WHO's revised air quality guidelines, while Mumbai's exceeded 8-fold, Kolkata 9.4, Chennai 5.4, Hyderabad 7 and Ahmedabad exceeded 9.8 fold. "Air pollution is a threat to health in all countries, but it hits people in low- and middle-income countries the hardest,"

WHO Director-General Tedros Adhanom Ghebreyesus said in a statement. "WHO's new Air Quality Guidelines are an evidence-based and practical tool for improving the quality of the air on which all life depends. I urge all countries and all those fighting to protect our environment to put them to use to reduce suffering and save lives."

Every year, **Exposure to Air Pollution** is estimated to cause 7 million premature deaths and result in the loss of millions more healthy years of life. In children, this could include

1. **Reduced Lung Growth And Function.**
2. **Respiratory Infections**
3. **Aggravated Asthma.**

In adults,

1. Ischaemic heart disease
2. Stroke

are the most common causes of premature death attributable to outdoor air pollution, and evidence is also emerging of other effects such as **Diabetes and Neurodegenerative conditions**. This puts the burden of disease attributable to air pollution on a par with other major global health risks such as unhealthy diet and tobacco smoking, the WHO noted.

Severe Health Crisis

“There is a body of scientific evidence to prove that air pollution is leading to severe health impacts and 90% of the entire global population is breathing polluted air. Air pollution is a severe health crisis and WHO’s revised air quality guidelines bring back the focus to the issue,” said SN Tripathi, Professor, IIT Kanpur & Steering Committee Member, **National Clean Air Programme, India**.

Both PM2.5 and PM10 are capable of penetrating deep into the lungs but PM2.5 can even enter the bloodstream, primarily resulting in cardiovascular and respiratory impacts, and also affecting other organs. PM is primarily generated by fuel combustion in different sectors including transport, energy, households, industry and from agriculture. In 2013, outdoor air pollution and particulate matter were classified as carcinogenic by **WHO’s International Agency for Research on Cancer (IARC)**.

Why has India agreed to resume vaccine export?

The story so far: With close to 85 crore doses of COVID-19 vaccine doses dispensed in India so far, Health Minister Mansukh Mandaviya earlier this week disclosed **plans to resume export of the India-made vaccine from October**, under a programme called ‘Vaccine Maitri’, to foreign countries as well as COVAX. The latest supply forecast for **global vaccine-sharing platform, COVAX**, is that it will have distributed 1.4 billion doses by the end of 2021, less than the 2 billion doses it had aimed for earlier this year. Only 280.5 million doses have been given out through COVAX as of September 15.

How many doses has India supplied abroad?

According to data from the Ministry of External Affairs, as of May 31, **6.6 crore doses of locally made vaccines have gone out of India** either as grants, exports or supplies to COVAX. The last despatch was on March 29. Close to 99% of the vaccines supplied were Covishield.

Why did India stop vaccine exports?

India’s vaccination drive began in January for healthcare workers and was gradually expanded to those aged over 60. Until February, the uptake was slow. India had not yet approved foreign-made vaccines, and though Bharat Biotech’s Covaxin was approved before the results of its ongoing phase-3 trials, there was too little of it available to the public.

What is Covishield’s role in COVAX?

The Pune-based Serum Institute of India (SII) was expected to be the mainstay for COVAX. Along with the unexpected spike in demand in India following the second wave. The speedy production of Covishield was aided by a **\$300-million investment in SII**, in November 2020, by the Bill & Melinda Gates Foundation to offset the risk from producing billions of doses of vaccine and in case it was proven to be not effective. However, with the second surge and the export restrictions, COVAX and its member-partners have over the last few months expressed concerns that **SII’s inability to manufacture** has meant that COVAX’s commitment to supply two billion doses by the first quarter of 2022 would be impacted. African Union countries are expected to receive 470 million doses by the end of 2021, but the forecast is 25% lower than predicted in June 2021.

What has changed now?

Regarding the resumption of exports, India has said only “excess supplies” will be eligible for exports. Vaccine production has nearly doubled since April and could rise to over 30 crore doses by October, thus freeing up supplies. Several factors favour India. There is a steady decline in new cases, **over half the adults have got at least one dose** and, despite reports of fully inoculated people catching the infection, there is no worrying rise in severe disease or mortality. However, Covishield continues to be India’s vaccine mainstay. The supply of Covaxin has increased, but it still accounts for only around 11% of India’s total vaccine output. Millions of doses of Sputnik V, Sputnik Light, Corbevax and ZyCoV-D are projected to be available in the next few months but so far none has started rolling off the shelves. With nearly 100 crore doses needed to fully vaccinate all adults, it is unlikely that all will be fully vaccinated by the year-end. For that, one crore doses need to be administered every day. India’s average daily pace now is about 70 lakh doses.

35 USISPF: NANCY PELOSI, PIYUSH GOYAL TO ADDRESS ANNUAL SUMMIT

USISPF is a **Non-Profit Organisation** committed to creating a powerful strategic partnership between the U.S. and India.

American political leaders, including House Speaker Nancy Pelosi and Senate Majority Leader Chuck Schumer along with **four senior Indian ministers** and a galaxy of corporate executives would be addressing the annual summit of **U.S. India Strategic and Partnership Forum (USISPF)**.

The fourth Annual Leadership Summit of USISPF would also present the Global Leadership award to **Natarajan Chandrasekaran of Tata Sons, Punit Renjen of Deloitte Global and Rajesh Subramaniam of FedEx.**

BRIEFLY ON USISPF

USISPF, which is a **non-profit organisation** committed to creating a powerful strategic **partnership between the U.S. and India**, said that the Cabinet Minister who have confirmed to address the meeting include Minister of Textiles, Minister of Commerce and Industry **Piyush Goyal**, Civil Aviation Minister, **Jyotiraditya Scindia**, Sports Minister **Anurag Thakur** and IT Minister **Rajeev Chandrasekhar**.

George R. Oliver, chairman and CEO of Johnson Control; Ajay Singh, chairman and managing director of **SpiceJet**; Nik Deogun, CEO of the Americas and U.S. Senior Partner of Brunswick Group; Nelson Cunningham, president and co-founder, McLarty Associates; are among other speakers from the corporate sector.

Several top Indian bureaucrats are also scheduled to speak at the summit. Prominent among them being Prof. V.K. Paul, member, **NITI Aayog**; Dr. Randeep Guleria, Director of All India Institute of Medical Sciences; Rita Teatota, chairperson, Food Safety and Standards Authority of India; Dr. Renu Swarup, Secretary, DBT; and S. Aparna, Secretary, Department of Pharmaceuticals, Ministry of Chemicals and Fertilizers.

36 NEW YORK COURT PAUSES TAX SUIT - CAIRN DISPUTE WITH INDIA

RETROACTIVE TAX

Cairn and Air India in a joint request to U.S. District Judge stated that a stay on proceedings would give them "additional time to evaluate the effects and implications" of legislation that **repealed the retroactive tax**.

A New York court has paused Cairn Energy's pursuit of U.S. assets of Air India for the recovery of \$1.2 billion arbitral award, so as to allow the British firm to reach a settlement with the Indian government on the long drawn dispute. The New York district court delayed the tax suit.

This follows Cairn Energy and Air India jointly asking the court to stay further proceedings in view of the fresh government enacting a fresh law to scrap retrospective taxation in the country. The new law will result in **withdrawal of the ₹10,247 crore tax** demand that the government had sought from Cairn.

Sources with direct knowledge of the matter said the Finance Ministry is framing rules that will lead to withdrawal of the retrospective tax demand on Cairn and 16 other companies, including **Vodafone Group of United Kingdom**.

OBJECTIVE:

These rules require the companies to **withdraw all litigations against the government in return** for being refunded any money that was collected to force the retrospective tax demand. A format for the undertaking that the companies will have to furnish committing to withdraw litigations is under finalisation and should be released in coming days, they said.

Companies will have to use that format to give an undertaking, post which the money will be refunded. In all the government has to return about ₹8,100 crore, of which ₹7,900 crore is due only to Cairn.

The **British Company Had Won An International Arbitration Award** against levy of such taxes and sought to take over Air India assets when the government refused to honour the award and refund \$1.2 billion-plus interest and penalty.

Cairn has indicated that the refund, without interest and penalty, was acceptable to it - opening an avenue to settle the seven-year-old dispute. Cairn and Air India in a joint request to U.S. District Judge Paul Gardephe on September 13 stated that a stay on proceedings would give them "additional time to evaluate the effects and implications" of legislation that repealed the retroactive tax. In return for the ₹7,900 crore, Cairn would drop lawsuits threatening court-ordered seizures of Indian government property abroad.

One of those suits was filed in May against State-owned Air India Ltd., which Cairn has said should be considered the alter ego of the Indian government.

"The implementing regulations are in the rulemaking process and will take some time," the two had said in the petition seeking extension of the October 21 deadline for the presentation of case papers and initial pretrial conference on October 28.

They had requested the court to "stay any further proceedings in this matter and reschedule the initial pretrial conference and, respectively, the deadline for the parties to submit their Joint Pretrial Letter and Proposed Case Management Plan, for new dates." "The Parties have conferred and agreed that the stay will facilitate the efficient resolution of the dispute, conserve the Court's and Parties' resources, and is not intended to obstruct or delay," they added.

Cairn had on May 14 brought a lawsuit in the New York district court to hold Air India liable as the **alter ego of the Republic of India** for the obligations the government owes under a foreign arbitral award. The firm separately filed a petition before the District Court for the District of Columbia to recognise and enforce the arbitration award against India on February 12, 2021.

Seeking to repair India's damaged reputation as an investment destination, the government last month enacted new legislation to drop ₹1.1 lakh crore in outstanding claims against multinationals such as telecom group Vodafone, **pharmaceuticals company Sanofi and brewer SABMiller, now owned by AB InBev, and Cairn**. About ₹8,100 crore collected from companies under the scrapped tax provision are to be refunded if the firms agreed to drop outstanding litigation, including claims for interest and penalties.

An international arbitration tribunal in December overturned the levy of ₹10,247 crore in taxes on a 2006 reorganisation of Cairn's India business prior to its listing. It also asked the Indian government to return the value of shares seized and sold, dividend confiscated and tax refund withheld. This totalled \$1.2 billion-plus interest and penalty.

The government initially refused to honour the award, forcing Cairn to identify \$70 billion of Indian assets from the U.S. to Singapore to enforce the ruling, including taking flag carrier Air India Ltd. to a U.S. court in May. A French court in July paved the way for Cairn to seize real estate belonging to the Indian government in Paris.

All these litigations will be dropped once ₹7,900 crore is paid, Cairn chief executive officer Simon Thomson had told PTI earlier this month.

37 IMPORTER-EXPORTER CODE NOT UPDATED -TO BE DE-ACTIVATED

The IEC is a key business identification number that is mandatory for exports or imports.

The Commerce Ministry has decided to deactivate all importer-exporter codes (IECs) that **have not been updated after January 2005** with effect from October 6 this year, a move which would help in knowing the actual number of real traders in the country.

WHAT IS IEC?

The Importer -Exporter Code (IEC) is a key business identification number that is mandatory for exports or imports. No person shall make any import or export except under an IEC number granted by the DGFT.

RECENT POLICY CHANGE

On August 8, 2021, the Directorate General of Foreign Trade (DGFT) was mandated all IEC holders to ensure that details in their IEC are updated electronically every year during the April-June period. "All IECs which have not been updated after January 1, 2005, shall be deactivated with effect from October 6, 2021," according to a trade notice of the DGFT. It stated that the concerned IEC holders are provided one final opportunity to update their IEC in this interim period till October 5, failing which the given code would be deactivated from October 6.

According to an industry expert, de-activation of IECs helps in reducing the base load of the directorate and it helps in knowing the actual number of real exporters and importers in the country. The nature of the firm obtaining an IEC includes **proprietorship, partnership, LLP, limited company, trust, and society**. After the introduction of GST (Goods and Services Tax), **IEC number is the same as the PAN of the firm**.

37 AMITY WITH ALL AND ENMITY WITH NONE' POLICY OF NEPAL

India And China Remains Of 'Paramount Importance' In Conduct Of Our Foreign Policy: Nepal At U.N.

Addressing the General Debate of the UNGA's, Narayan Khadka said that Nepal's worldview is shaped by its adherence to the principle of '**AMITY WITH ALL AND ENMITY WITH NONE**'.

Nepal's friendship with both neighbours, India and China, remains of "paramount importance" in the conduct of its foreign policy, the country's new Foreign Minister Narayan Khadka has said at the high-level **76th United Nations General Assembly**. Addressing the General Debate of the UNGA's final day, Mr. Khadka said that Nepal's worldview is shaped by its adherence to the principle of 'amity with all and enmity with none'.

The government of Nepal led by Prime Minister Sher Bahadur Deuba is "committed to conduct the foreign policy on the basis of sovereign equality, mutual respect, and mutual benefit and remains engaged with all friendly countries in the wider international community," he said.

NEPALS STANDS ON PRINCIPLES OF PANCHSHEEL

"Our friendship with both of our neighbours, India and China, remains of paramount importance in the

conduct of our foreign policy based on the principles of **Panchsheel - five principles of peaceful co-existence**, derived from the **teachings of Lord Buddha**, the enlightened son of Nepal,” he said. The relevance of these principles as a framework for interstate relations cannot be overstated in the present context, Mr. Khadka, who was appointed as Nepal’s Foreign Minister said. “Principles and purposes of the U.N. Charter, non-alignment, international law and norms of world peace form the basis of our foreign policy,” he said.

Asia-Centered On The Economic Growth Of China And India:

“The world’s economic center of gravity is shifting decisively towards **Asia- centered on the economic growth of China and India**. At the same time, the world is becoming more complicated and polarised, with transnational challenges ranging from terrorism to climate change to food security to mass migration to political radicalism and extremism,” he said.

“My delegation considers that democracy and multilateralism have no alternative to overcome the stresses and strains of the day. It is also the best antidote to the risk of civil conflict in ethnically diverse societies,” he said.

NEPALS PRIOTIY 2022:

1. In Nepal, saving lives, strengthening the health system, and pursuing economic recovery and transformation underpin our efforts to build a **sustainable and resilient recovery**. Despite constraints and challenges to access COVID-19 vaccines, we have been able to vaccinate close to 20% of our population.
2. It remain grateful to our immediate neighbours - India and China for their support in fighting the Covid crisis,” he said and also thanked “friendly countries” like the **United States, Britain, Japan** and others for providing vaccines, critical medical equipment, and medicines in Nepal’s fight against the pandemic.
3. Condemning **Terrorism** in all its forms and manifestations, Nepal denounced all activities aimed to fuel social discord, communal conflicts, and intolerance. There is a need of robust global cooperation to effectively implement the UN Global Counter-Terrorism Strategy, to combat and control financing of terrorism, and to fight the organised trans-border crimes. This underlines the urgency for conclusion of a comprehensive convention against terrorism.

Nepal calls for general and complete disarmament of all weapons of mass destruction in a time-bound and verifiable manner,” he said.

1 HANDLOOM REVIVALIST SURAIYA HASAN PASSES AWAY

Suraiya Hasan Bose known as **Suraiya Apa**, who was instrumental in reviving the **handloom heritage fabrics** like **Himroo Brocade, Mashru, and Telia Rumal** passed away. She was 93.

Born and brought up in **Hyderabad**, she travelled **the world learning** about **crafts and fabrics**. Educated in Cambridge, she returned to India to work at the Cottage Industries Emporium established by her **father Badrul Hasan**, who was a **freedom fighter**. In the mid-50s she moved to Delhi and worked with Pupul Jayakar and Kamaldevi Chattopadhyay at the Handloom and Handicrafts Export Council. Her husband **Aurobindo Bose**, a **nephew of Subhash Chandra Bose**, predeceased her.

She was responsible for bringing in **Ikat and Kalamkari Dyeing Techniques** to durries and **Gadwal and Uppada Saris** making them attractive to foreign buyers as well as the more fashion conscious circles in India. Another weaving tradition she saved from extinction was **Telia Rumal** which now has a Geographical Indication tag.

2 HARVINDER SINGH WINS BRONZE, INDIA'S FIRST ARCHERY MEDAL IN PARALYMPICS

Harvinder Singh notched up **India's first ever archery medal in the Paralympics**, holding his nerves to down **Kim Min Su of Korea** in a thrilling shoot-off for the men's individual recurve bronze in the ongoing Games here. World No.23 Singh was **the first athlete from India to win a gold medal at a major para competition in the 2018 Asian Games**.

An economics scholar from the Punjabi University, Patiala, Singh collected three shoot-off wins on the day starting with his triumphs in the opening rounds.

Singh, who is from a small village Guhla Cheeka near **Kaithal in Haryana**, was stretched to the fullest in the first two rounds, but he showed tremendous resilience to overcome his fancied opponents via shoot-offs.

3 PARALYMPICS | LEKHARA HAS EMERGED AS ROLE MODEL

Paralympic Committee of India (PCI) President **Deepa Malik** lauded **shooter Avani Lekhara**, who created history by becoming **the first Indian woman to win two Paralympic medals**, saying the **trailblazing athlete** has emerged as a "role model" for the country's youngsters.

Lekhara became **the first Indian woman to win two Paralympic medals** by claiming the 50m Rifle 3 Position SH1 bronze to add to an unprecedented gold she had secured earlier in the ongoing Games here.

In the fiercely contested finals, Lekhara totalled **445.9** to finish ahead of **Ukraine's Iryna Shchetnik**, who let slip her grip on the medal spot with a poor third shot of 9.9 in the elimination.

Lekhara had become the first Indian woman to win a Paralympic gold by claiming the top honours in the **10m air rifle standing SH1 event**.

'Ammamayude Kochumon' as in News recently

Octogenarian **Mary Joseph Mampilly** has more followers on her Facebook page than an average celebrity. Her page, handled by her grandson Jinson Mampilly, has over **8,35,000 followers**. The duo started making **short videos in 2018**, which resonated with people and in less than three years, they are social media influencers.

87-year-old Mary may not exactly know what an influencer means, but she understands the potential of the internet. "I do what Jinson tells me, but I am mostly myself," says Mary, over the phone from her home in **North Paravur near Kochi**. "And that is why people love our videos. Most of it is spontaneous, and people love Ammama's wise-cracks," says Jinson.

Their Facebook handle - **'Ammamayude Kochumon'** - showcases the relationship between the grandmother and grandson.

Mary and Jinson launched **'Ammamma Special Pickles'** in 2019. The first batch, about five kilos of beef pickle, was a winner and sold out in no time.

Prime Minister Narendra Modi congratulated the three Indian medal-winners at the Tokyo Paralympics and praised their hard work.

Lauding **Praveen Kumar**, who won a silver medal in the men's high jump T64 event of the Paralympics, Mr Modi said it was the result of his hard work and unparalleled dedication.

Congratulating shooter **Avani Lekhara**, who created history by becoming **the first Indian woman to win two Paralympic medals**, the prime minister said, "More glory at the Tokyo Paralympics.

He also hailed **Harvinder Singh**, who notched up India's **first-ever archery medal** in the Paralympics holding his nerves to down Kim Min Su of Korea in a thrilling shoot-off for the men's individual recurve bronze in the ongoing Games.

Union Home Minister Amit Shah felicitated **Olympic champion Mirabai Chanu** for bringing laurels to the country in **weightlifting**.

The 27-year-old sportsperson, appointed as **additional superintendent of police in her home state Manipur** after the recent win, was honoured during the 51st raising day celebrations of the **Bureau of Police Research and Development (BPR&D)**, a central government think tank.

Mr. Shah presented the athlete with a shawl and memento.

He said Chanu brought honour for the country by winning a medal at the **Tokyo Olympic games** and is now a proud member of the police force.

Chanu had clinched a silver medal in the 49kg category weightlifting that opened India's account at the recently-concluded Tokyo Olympics. India won a total of seven medals at these games.

The BPR&D, an organisation under the Ministry of Home Affairs, was founded in August, 1970.

7**SHOOTER MANISH NARWAL CLINCHES INDIA'S 3RD GOLD**

Shooter **Manish Narwal** clinched **India's third gold** at the ongoing Paralympics while compatriot **Singhraj Adana** bagged the silver in the P4 Mixed 50m Pistol SH1 event.

The 19-year-old Narwal shot a total of 218.2, a Paralympic record, to claim the yellow metal while Adana, who had won the bronze in the P1 men's 10m air pistol SH1 event on Tuesday, added a silver to his kitty with an effort of 216.7.

Russian Olympic Committee's **Sergey Malyshev** took home the bronze with an effort of 196.8.

As the pistol is held with one hand only, athletes in SH1 category have an impairment affecting one arm and/or the legs, for example resulting from amputations or spinal cord injuries. P4 is a classification for the mixed 50m air pistol competition.

8**PRAMOD BHAGAT WINS HISTORIC BADMINTON GOLD IN PARALYMPICS**

Reigning world champion **Pramod Bhagat** claimed a historic **Gold Medal in men's singles SL3** class while **Manoj Sarkar** bagged the **bronze** as India stamped their prowess at the Tokyo Paralympics here.

Bhagat Vs **Great Britain's Daniel Bethell** in the summit clash while Sarkar Vs Japan's Daisuke Fujihara in the third place play-off, with both the Indians winning in straight games.

Bhagat, the current **world No. 1**, thus became the **first Indian to win a gold medal** in the sport.

Bhagat and his partner Palak Kohli will square off against Japanese pair of Daisuke Fujihara and Akiko Sugino in the bronze medal play off on Sunday.

They had lost the semifinals 3-21 15-21 to **Indonesian combination of Hary Susanto and Leani Ratri Oktila** earlier in the day.

Bhagat, who had **contracted polio when he was 4 years old**, picked up the sports after watching his neighbours play. He started his career as a badminton coach but took a break in 2019 to focus on Tokyo Paralympics qualification. In 2019, he **received the Arjuna Award** and Biju Patnaik Award for Excellence in Sports in India.

The 31-year-old Sarkar, who whose right leg was affected after he contracted **polio at age one**, displayed great resilience during his 22-20 21-13 win over Fujihara.

9**WOMEN'S HOCKEY COACH FELICITATED**

Shivamogga district administration felicitated **Ankita B.S., Assistant Coach of the Indian Women's Hockey Team**, which finished fourth in the Olympics at Tokyo.

10**TN TO OBSERVE PERIYAR'S BIRTH ANNIVERSARY - DAY OF SOCIAL JUSTICE**

The birth anniversary of social reformer and **Dravidar Kazhagam** founder '**Periyar**' **E.V. Ramasamy** would be observed as 'Day of Social Justice' in Tamil Nadu on **September 17** every year.

Employees in all State government offices, including those in the Secretariat would on that day undertake a pledge to follow the principles of self-respect, rationalism, brotherhood, equality, humanitarianism and social justice, Mr. Stalin said in a suo motu statement.

The Chief Minister recalled the eventful life of 'Periyar' and said that he spoke and wrote words which others hesitated to utter. **Abolition of caste and equality of men and women** were the reformer's two primary principles.

"The **first amendment to the Indian Constitution** came about because of this man, who never went to the Parliament," Mr. Stalin said.

11 SURABHI NATAKOTSAV' HELD IN NIZAMABAD

Despite a lull during the pandemic, the iconic 136-year-old **Surabhi Theatre** successfully reinvented itself by transitioning into the digital space. An appeal was made to theatre lovers to support the family theatre group in sustaining their theatre activity. Meanwhile, with the pandemic restrictions easing everywhere, a three-day theatre fest '**Surabhi Natakotsav**' was held in Nizamabad under the aegis of **Sripada Nataka Kala Parishat** in association with Manjira Helping Hearts Foundation, Navatha and in collaboration with Rangasai Nataka Sangham of Visakhapatnam.

During the three days, Surabhi's three popular plays - **Medaram Sammakka Saralamma, Sri Krishna Leelalu and Mayabazar** were staged by Sri Sai Santoshi Natya Mandali, a unit of the Surabhi group after ensuring COVID safety measures.

12 IN CENTENARY YEAR, VISVA-BHARATI'S POPULARITY TAKES A DIP

The **Vice-Chancellor of Calcutta University** issued a circular thanking her colleagues because the institution had, earlier in the day, climbed to the number 4 spot (in the 'university' category) of the NIRF Rankings 2021. Last year, it stood at number 7.

The same day, **about 160 km away, in Santiniketan, the Rabindranath Tagore-founded Visva-Bharati** also issued a circular, but to announce the extension of a well-known professor's suspension. It had nothing to say about the NIRF, or the **National Institutional Ranking Framework**, because its spot among universities across the country had taken the deepest plunge since the ranking was instituted in 2015: from the 11th position in 2016 to 19th in 2017 to 31st in 2018 to 37th in 2019 to 50th in 2020 to **64th in 2021**. In the overall category, which includes all institutions such as engineering, medical and other colleges, Visva-Bharati ranked 97.

13 NOTED KASHMIRI WRITER AZIZ HAJINI PASSES AWAY

Noted writer and former secretary of **Jammu and Kashmir Academy of Art, Culture and Languages Aziz Hajini** passed away in Srinagar after a brief illness. He was 64.

Hajini, who hailed from **Hajin Sonawari area of north Kashmir's Bandipora** district, held several positions in academic and literary circles, including as secretary of the Jammu and Kashmir Academy of Art, Culture and Languages, and authored several books.

14 100TH DEATH ANNIVERSARY OF TAMIL POET SUBRAMANIA BHARATHI OBSERVED

Led by Lt. Governor Tamilisai Soundararajan, the Union Territory on observed the **100th death anniversary of poet Subramania Bharathi**.

Ms. Soundararajan in a statement thanked Prime Minister Narendra Modi for establishing a **Tamil Study chair at the Banaras Hindu University** on the occasion of poet's death anniversary. The Prime Minister has recognised pride in the fact that Tamil is one of the oldest languages in the world, the statement said.

15 KESHAV DESIRAJU REMEMBERED

Speakers who shared their memories of **Keshav Desiraju**, a bureaucrat who recently passed away in Chennai, recalled him as a gentleman who touched many people's lives. Desiraju, former Union Health Secretary and **grandson of former President Sarvepalli Radhakrishnan**, died on the latter's birth anniversary.

As the Union Health Secretary, he laid **the foundation for a Mental Health Act** which he pursued even after moving out of the department, said K. Sujatha Rao, former Union Health Secretary.

16 TOP PLAYERS TO PUSH KASHMIR AS INDIA'S GOLFING CAPITAL

In a major push to promote **Kashmir as a golfing capital of the country**, top golfers are among 125 players participating in the TATA Steel Professional Golf Tour of India's (PGTI) 13th season of golf tournament at Srinagar's picturesque Royal Springs Golf Course (RSGC).

"It's a proud moment for J&K to host the tournament, as J&K pitches itself as a golfing capital of the country," Sarmad Hafeez, Secretary, Tourism, said.

He said the tournament was a testament to the fact that Kashmir had world class golfing infrastructure. It had a golf circuit, comprising two courses in Srinagar and two others in **Gulmarg and Pahalgam** tourist destinations.

The TATA Steel PGTI will witness participation of 125 golfers, including 119 professionals and six amateurs. Among them are **Olympian Udayan Mane**, Indian star **Jyoti Randhawa** and PGTI Order of Merit leader **Karandeep Kochhar**.

The **18-hole course**, spread over 100 hectares, is of 225 meters in length with three lakes, two marshes and underground sprinkler irrigation system against the backdrop of **Zabarwan hills**.

The event is seen as a shot in the arm for tourism in Kashmir, which is bouncing back after facing back-to-back slumps, first due to the clampdown that followed the Centre's move to end J&K's special constitutional position in August 2019 and later due to the first wave of pandemic in 2020.

17 ATUL BHATT IS NEW CMD OF RINL

Atul Bhatt assumed charge as the **Chairman and Managing Director of the RINL**, the corporate entity of **Visakhapatnam Steel Plant**.

Mr. Bhatt was earlier the CMD of MECON Limited.

18 SANGAMESH HANDIGI PASSES AWAY

Writer and Teacher Sangamesh Handigi (84) passed away in **Hubballi** on after a brief period of illness. A recipient of various literary awards, Prof. Handigi has 46 books in Kannada to his credit. He has written poems, critical essays and Vachanas.

A native of Telagi in Basavana Bagewadi taluk of Vijayapura district, Prof. Handigi was actively involved in **literary activities**. He has left behind a few unpublished works.

Prof. Handigi had served as Head of Kannada Department at Shankar College in Navalgund, before serving as visiting faculty member at **Kannada University, Hampi**, for some time during which he guided several research students.

19 INTERNATIONAL COASTAL CLEAN-UP DAY OBSERVED BY NAVY AND COAST GUARD

The 36th International Coastal Clean-up Day was organised for the tenth year on the trot by the **Eastern Naval Command (ENC)**. On the occasion, the ENC undertook the drive at **Yarada Beach, Bheemunipatnam Beach** and other sea fronts that are within the purview of naval units in Visakhapatnam. About 500 naval personnel, defence civilians and their families participated in the drive, adhering to the COVID-19 protocols.

The drive was aimed at creating awareness among people to keep the beaches clean, safeguarding the environment and inculcating the habit of respecting coastlines which in turn nurtures marine biodiversity.

The **International Coastal Clean-up Day** began more than 30 years ago when communities rallied together with the common goal of collecting and documenting the trash littering their coastline. **Every year, on the third Saturday of September**, the International Coastal Clean-up Community encourages people around the world to remove trash and debris from beaches, waterways and other water bodies.

Indian Coast Guard District Headquarters No.6 (Andhra Pradesh) also organised a beach clean-up activity at Yarada beach.

20 INS AGRANI CELEBRATES 56TH ANNIVERSARY

INS Agrani, the leadership training establishment of the Indian Navy based at Red Fields in Coimbatore, celebrated its 56th anniversary.

INS Agrani has its **origin** from the erstwhile **Petty Officer's Leadership School, INS Varakkal**, which was shifted from **West Hill in Kozhikode** to the present campus at **Red Fields in Coimbatore**. The unit was subsequently commissioned as INS Agrani on September 18, 1965.

Since its inception, INS Agrani has been **imparting leadership and management training** to the senior sailors who form the bedrock of a strong navy. It plays a pivotal role in the grooming of these men and their transformation into leaders. The training equips them to shoulder higher and critical responsibilities both ashore and afloat, said a release.

21 FLORENCE NIGHTINGALE AWARD FOR BRIG. SARASWATI

In a virtual ceremony, **President Ram Nath Kovind** conferred the **National Florence Nightingale Award 2020** on **Deputy Director General of Military Nursing Service (MNS) Brig. S.V. Saraswati** for her immense contribution to the MNS as nurse administrator, a Defence Ministry statement said.

National Florence Nightingale Award is **the highest national distinction a nurse can achieve** for selfless devotion and exceptional professionalism.

"As a renowned operation theatre nurse, Brig. Saraswati has assisted in more than **3,000 lifesaving and emergency surgeries** and has trained residents, operation room nursing trainees and auxiliary staff in her career," the statement said. She has prepared patient teaching materials and improvised drape kits and suture packing for cardiac surgeries, it stated.

Brig. Saraswati hails from **Chittoor district of Andhra Pradesh** and was commissioned into the MNS on December 28, 1983.

In recognition of her distinguished service, Brig. Saraswati was awarded General Officer Commanding-in-Chief Commendation (2005), United Nations Medal (MONOC) (2007) and Chief of the Army Staff Commendation (2015).

22 BISHEN SINGH BEDI - THE MAN KEPT IN TOUCH HIS INNER CHILD

Bishan Singh Bedi, the youngest and most colourful of India's great spin quartet, turns 75. Of India's great spin quartet, **Erapalli Prasanna and Bhagwat Chandrasekhar, Venkatraghavan .**

23 ICELAND ELECTS ITS FIRST FEMALE-MAJORITY PARLIAMENT

Iceland has elected a **female-majority parliament**, a landmark for gender equality in the North Atlantic island nation, in a vote that saw centrist parties make the biggest gains. Female candidates held **33 seats in Iceland's 63-seat parliament**, the Althing. The three parties in the outgoing coalition government led by **Prime Minister Katrin Jakobsdottir** won a total of **37 seats** in vote, two more than in the last election, and appeared likely to continue in power.

Before the election, the two parties formed Iceland's three-party coalition government, together with Ms. Jakobsdottir's **Left Green Party**. Her party lost several seats, but kept eight, outscoring poll predictions.

Climate change had ranked high on the election agenda in Iceland, a glacier-studded **volcanic island nation of about 350,000 people** in the North Atlantic. An exceptionally warm summer by Icelandic standards - with **59 days of temperatures above 20° C (68° F)** - and shrinking glaciers have helped drive global warming up the political agenda.

But that didn't appear to have translated into increased support for any of the four left-leaning parties that campaigned to cut carbon emissions by more than Iceland is committed to **under the Paris Climate Agreement**.

Among incoming members of parliament are the oldest and youngest lawmakers ever to take a seat in Iceland: 72-year-old burger joint owner **Tomas Tomasson** and 21-year-old law student **Lenya Run Karim**, a daughter of Kurdish immigrants who is from the anti-establishment Pirate Party. .

24 SIR C.V. RAMAN SCIENCE MUSEUM READY FOR INAUGURATION

Sir C.V. Raman Science Museum, established at a cost of ₹1.4 crore, including building and equipment, is all set for inauguration. The equipment was provided by **B.M. Birla Science Centre in Hyderabad**, with which a Memorandum of Understanding (MoU) was signed.

As many as 54 subjects are covered in the science museum with a list of experiments and principles on which it works. The subjects covered include **Physics, Electronics, Biology, Astronomy (Space), and Mathematics**.

In the stream of Mathematics, there are nine models that explain 45 theorems from Class VI to X, which includes geometrical verification and algebraic identity, Venn Diagrams and area of circle and triangles.

25 FRANCE CUT VISAS -NORTH AFRICANS IN MIGRATION DISPUTE

France will reduce the number of visas issued to people in North Africa because governments there are refusing to take back migrants expelled from France, the French government's spokesperson.

The French government plans to reduce the number of visas given to **Algerians and Moroccans by half, and to Tunisians by 30%**, reports said.

Government spokesman Gabriel Attal said France decided to take action starting in a few weeks because Algeria, Morocco and Tunisia had refused to provide **consular documents for their citizens** being deported

from France after arriving illegally. All three countries were part of **France's colonial empire**, and many Europe-bound migrants coming from the North African nations have family or other ties in France.

After the announcement, **Tunisian President Kais Saied's** office said in a statement: "We are among countries that are cooperative in this domain, and we have excellent relations with France."

26 ETHIOPIA TO EXPEL SEVEN UN STAFF FOR 'MEDDLING'

Tigray was in News recently

Ethiopia said it would expel seven senior UN officials for "meddling" in its affairs, a move that came after aid workers sounded the alarm on humanitarian access to conflict-torn **Tigray**.

The foreign ministry said it had "declared a 'persona non grata' for seven individuals who are working for various international NGOs in Ethiopia for meddling in the internal affairs of the country". "According to the letters addressed to each of the 7 individuals listed below, all of them must leave the territory of Ethiopia within the next 72 hours," it said on its Facebook page.

Ethiopia's northern-most region of Tigray has been mired in conflict since November.

The United Nations has previously estimated that 4,00,000 people face famine-like conditions there, and fears are growing of deaths from starvation.

The UN has said the region remains under a de-facto blockade and warned of a "looming catastrophe" as fighting between Prime Minister Abiy Ahmed's forces and the Tigray People's Liberation Front (TPLF) has spread to neighbouring areas.

27 ROHINGYA REFUGEE LEADER SHOT DEAD IN BANGLADESH CAMP

An international representative of **Ethnic Rohingya Refugees** was shot to death in a camp in Bangladesh by unknown gunmen. Mohibullah, 50, was a teacher who emerged as a key refugee leader and a spokesman representing the **Muslim ethnic group in international meetings**. He visited the White House in 2019 for a meeting on religious freedom with then-President Donald Trump and spoke about the suffering and persecution faced by **Rohingya in Myanmar**.

That same year, he was bitterly criticized by Bangladeshi media after he led a massive rally of 200,000 refugees to mark the second anniversary of the crackdown by Myanmar's military that caused about 700,000 Rohingya, including Mohibullah, to flee to neighboring Bangladesh.

The unidentified attackers shot Mohibullah at the **Kutupalong refugee camp** at Ukhiya in **Cox's Bazar district**, said Naimul Haque, an commander of the Armed Police Battalion in Cox's Bazar. He was rushed to a hospital where he was declared dead.

"Mohibullah's death undermines not only the struggle of Rohingya refugees for greater rights and protection in the refugee camps, but also their efforts to safely return to their homes in Myanmar.

28 WHAT IS HAVANA SYNDROME?

According to the US media, a CIA officer, who travelled to India in September 2021, reported symptoms consistent with Havana syndrome.

According to the reports, around 200 U.S. officials and family members have been affected by Havana syndrome till now. People who have experienced **Havana Syndrome** report a set of ailments including **Migraines, Nausea, Memory Lapses and Dizziness**.

Komal Swaminathan was one of contemporary **Tamil stage's most powerful playwrights**. Born in 1935 in Karaikudi, he finished his graduation in Madurai and came to Madras in the mid-1950s driven by a passion for theatre. While in college, he was a Congress activist who had made a name for himself with his fiery stage speeches.

It was a time when Tamil theatre was undergoing a metamorphosis of sorts, marked by the advent of amateur theatre. The genres of the plays being staged too started undergoing a change, with more social themes being presented, as compared to the earlier eras.

Against this backdrop, theatre legend **S.V. Sahasranamam** started the Seva Stage Nataka Kalvi Nilayam, a drama school in 1957 to teach aspirants various aspects of stagecraft. Komal Swaminathan joined the institution, which had 26 students on its rolls. Classes were handled by several well-known personalities in the field of Tamil literature and theatre such as Prof **Khi.Va. Jagannathan, S.D. Subramania Yogi and Avvai Shanmugam**, besides Sahasranamam himself.

Srjan, Guru Kelucharan Mohapatra Odissi Nrityabasa, Bhubaneswar, which has been regularly promoting Odissi, hosted a virtual 27th edition of the OMC Guru Kelucharan Mohapatra Award Festival, dedicated to Laxmipriya Mohapatra, the **first woman Odissi dancer**, who passed away in march 2021.

The governor of Odisha, Prof. Ganeshi Lal, presented the award to veteran actor Binodini Devi for her commitment to the field of theatre. The Guru Kelucharan Mohapatra Yuva Pratibha Samman was given to **Odissi dancer Arushi Mudgal and Mardal Artiste Ramchandra Behra**.

Odissi exponent Sharmila Mukherjee, a disciple of Kelucharan Mohapatra, opened the festival with a performance marked by the signature style of her guru. It was followed by a violin recital by Sangeeta Shankar, daughter and disciple of Dr. N. Rajam.

Kathak by Nikkita Banawalikar was among the remarkable solo dance performances.

The **flute recital by Abhiram Nanda**, initiated into music by **Pt. Mohinimohan Patnaik and Rupak Kumar Parida** is one of the most sought-after and versatile Odissi singers today.

The **Indian women's football team** arrived in the city for its upcoming friendlies in the UAE and Bahrain, which get underway. The friendlies have been planned as part of the team's preparation for the **AFC Women's Asian Cup**, which is set to take place in India 2022.

The Indian team has been camping in Jamshedpur with help from the government of Jharkhand. The 23-member squad, along with the support staff, travelled from Jamshedpur to New Delhi, before boarding a flight to Dubai. The team will play friendlies against the **United Arab Emirates** (October 2) and Tunisia (October 4), before travelling to Bahrain, where it will face the hosts on October 10 and Chinese Taipei on Oct. 13.

Captain and centre-back **Ashalata Devi** thanked the authorities for arranging a camp and international matches amid a pandemic.

Goalkeepers: Aditi Chauhan, Maibam Linthoingambi Devi, Shreya Hooda. **Defenders:** Dalima Chhibber, Sweety Devi, Ritu Rani, Ashalata Devi, Ranjana Chanu, Michel Castanha, Manisa Panna, Astam Oraon.

Midfielders: Sangita Basfore, Indumathi Kathiresan, Sanju, Martina Thokchom. **Forwards:** Dangmei Grace, Anju Tamang, Sandhiya Ranganathan, Soumya Guguloth, Manisha Kalyan, Sumati Kumari, Pyari Xaxa, Renu .