EXCEL
QUEST

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EXCEL CIVILS ACADEMY
EMPOWERING FUTURE LEADERS

American Sanctions over North Korea

Meet the next ISRO Chief -Dr. S. Somanath

NATO-Russia Council Talks

Houthis attack UAE

India, Oman joint exercise

Davos Summit: World Economic Forum

India-China-Sri Lanka Triangle

India saw highest number of tiger deaths in 2021

Director's Message

Dear Aspirants,

Russia has stationed about 100,000 troops on the border with Ukraine, prompting US President Joe Biden to warn that there is a "distinct possibility" of an invasion in the very near future. On January 19, US Deputy Secretary of State Wendy Sherman called up India's Foreign Secretary Harsh Vardhan Shringla and discussed "Russia's concerning military build-up on Ukraine's borders". New Delhi did not issue an official statement then, choosing to closely monitor the developments. India had so far refrained from commenting on the situation in Ukraine in view of its close strategic relations with both Russia and the US but has now finally broken its silence. The first official statement from the Indian side on the developments in Ukraine was released which called for a peaceful resolution of the situation in Ukraine through sustained diplomatic efforts.

Putin has criticized NATO for expanding eastward since the fall of the Soviet Union in 1991 and opined that NATO enlisting nations on Russia's borders represents a provocation, though NATO insists it is a defensive alliance and not a threat to Russia. He also accused Ukraine of committing genocide and called its government a Nazi regime. The other justification given by Putin for invasion of Ukraine was that though Ukraine voluntarily gave up the nuclear weapons in its territory in exchange for a guarantee of security by the US, the UK, and Russia after the collapse of the Soviet Union, it has the knowledge and desire to obtain nuclear weapons, thus posing a threat to Moscow.

On the contrary, the major reason for this invasion by Russia as pointed by analysts is to build back an empire and restore the control Russia, or the Soviet Union, had over Europe and Asia during the Cold War. Ukraine played a key role not only in the creation of the USSR but also in its dissolution. It was the Ukrainian referendum of December 1 1991, in which over 90% of participants voted to leave the USSR that spelt the end of the superpower. Russia could not bear the burden of the Union without its second-largest economy.

Another reason put forward by analysts is that after Russia, Ukraine is the second largest country in Europe. It has major ports on the Black Sea and shares borders with four NATO countries. Europe depends on Russia for about one third of its natural gas, providing enormous leverage for Putin in any dispute with the West and one of the main pipelines passes through Ukraine. Controlling this Ukrainian territory would enhance Russia's pipeline security.

While there is a concern about Russia's invasion of Ukraine, New Delhi does not want to jeopardise its close military ties with Moscow, particularly amid the stand-off with China on the eastern border. India's defence ties with Russia are deep, with the armed forces having about 70 per cent of critical weapons procured from the country since the Soviet days. Russia has backed India's position on Kashmir and other matters at the UN. India's responses to any Russian issues have been reciprocal since the 1950s refraining from a negative stand on Soviet's military operation in Hungary in 1956, in Czechoslovakia in 1968.

The neutrality stand by India has certain risks associated with it. Since it is not openly condemning Russia, it might look as a validation of Putin's deeds of claiming territory. Pakistan and China can make use of this narrative and further their claims in the Kashmir valley and South Tibet respectively. Also, if the US imposes stricter economic measures against Russia, India might face sanctions under its "Countering America's Adversaries through Sanctions Act"(CAATSA) for buying S-400 defence systems from Russia. On the other hand, if India condemns Russia over its Ukraine invasion, its investment plan in the Russian hydrocarbon sector to support its energy needs might get derailed.

Former Foreign Secretary Kanwal Sibal, who was also India's ambassador in Russia, said "We [India] have very friendly ties with the US, Europe and Russia and would prefer not to take sides. This would require very deft diplomacy on our part. This is not fence-sitting but a dispassionate evaluation of the complex roots of the crisis based on its own experience in the subcontinent." India has to weigh its move in the context of the approach the West has taken on similar matters concerning India. Neutrality is a response that currently suits India in diplomacy without pondering much over morality and ethics.

While the United States accurately predicted the start of the war in Ukraine, sounding the alarm that an invasion was imminent despite Moscow's denials and Europe's scepticism, predicting how it might end is proving far more difficult.

Best wishes.

K. Rajendra Kumar IPS (Retd)

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1. NATIONAL

1.17 PM Gati Shakti

- Large-scale absence of coordination and collaboration among agencies has been a major challenge to time bound infrastructure project implementation in India.

- Very often these projects have faced time overruns, leading to significant cost escalations.

- As per the Ministry of Statistics and Programme Implementation (MoSPI), Government of India, in the beginning of 2021, 1,687 Union Government projects under implementation, valued more than Rs 21.45 lakh crore, had run into cost overrun of nearly 20 percent, largely because of their delays.

- The reason for delays include underestimation of original project cost, spiralling land acquisition cost, delays in environment, forest and wildlife clearances and industrial licensing permission, road crossing of pipelines/transmission lines, shifting of utilities, delays in the tie-up of project financing, delays in finalisation of detailed engineering, etc.

- In addition, there are bottlenecks at the State Government level such as issues in land acquisition and removal of encroachments, relief and rehabilitation planning and implementation, timely issuance of no objection certificate, necessary power and water supply, and work order related issues.

PM Gati Shakti

- Launched in 2020, it is a digital platform that connects 16 ministries — including Roads and Highways, Railways, Shipping, Petroleum and Gas, Power, Telecom, Shipping, and Aviation.

- It aims to ensure holistic planning and execution of infrastructure projects.

- It aims to boost multimodal connectivity and drive down logistics costs.

- PM Gati Shakti will cover the infrastructure projects worth over Rs 500 crore of various Ministries of the Union and State Governments like Bharatmala, Sagarmala, inland waterways, dry/land ports, UDAN (Ude Desh ka Aam Nagarik – subsidies for facilitating air travel), etc.

- The portal will offer 200 layers of geospatial data, including on existing infrastructure such as roads, highways, railways, and toll plazas, as well as geographic information about forests, rivers and district boundaries to aid in planning and obtaining clearances.

- The portal will also allow various government departments to track, in real time and at one centralised place, the progress of various projects, especially those with multi-sectoral and multi-regional impact

1.18 Passport Seva Programme (PSP)

- The government of India has announced that it will soon start issuing ePassports to citizens applying for a new passport or renewing their expiring passport.

- The announcement is under an agreement signed between the Ministry of External Affairs (MEA) and Tata Consultancy Services Limited (TCS) which will facilitate the next phase of the PSP (Passport Seva Programme) termed PSP-V2.0.
- The MEA-TCS collaboration has been a part of the passport process since 2008 and has helped in increasing digitisation of the complex process that requires multiple stakeholders across the spectrum of the vast Government network.
- Tata Consultancy Services will ensure "support functions" like "citizen interface, technology backbone, call centres, training and change management".
- The Government will exercise "all sovereign and security related functions" in the process of issuing passports.

Passport Seva Programme (PSP)

- PSP is one of the several Mission Mode Projects (MMPs) of India.
- A Mission Mode Project (MMP) is an individual project within the National e-Governance Plan (NeGP) that focuses on one aspect of electronic governance, such as banking, land records or commercial taxes etc.
- The PSP-V2.0 is an expansion and improvement of the PSP-V1.0, an e-government tool that brought new changes to the delivery of passport-related services to individuals.
- The new initiative is aimed at creating a digital platform that would be "transparent, more accessible and reliable" and that it would be backed by a trained workforce.
- This will create a state-of-the-art digital ecosystem, overhaul existing processes and integrate various wings of Government that are involved in issuance of passports.
- The new programme is expected to have technology upgrades including the use of the latest biometrics technology, Artificial Intelligence, Advance Data Analytics, Chat-Bot, Auto-response, Natural Language Processing, Cloud Enablement.
- The newest feature under the PSP-V2.0 will be the issuance of the new generation of passports called e-passports.

E-passports

- ePassport is an upgrade to the traditional passport and is aimed at making it more secure and ensuring smooth passage through immigration posts globally.
- The ePassports will be embedded with a chip that will include personal details of the holder including biographical information.
- The software for the ePassport has been developed by IIT Kanpur and the National Informatics Centre (NIC)

1.19 Increased Election Expenditure Limit

- The Election Commission has enhanced the existing election expenditure limit for candidates in Parliamentary and Assembly constituencies.

- These limits will be applicable in all upcoming elections. The ceiling on parliamentary poll expenditure has been raised from 70 lakh to 95 lakh rupees in bigger states and 54 lakh to 75 lakhs in smaller states.

- The bigger states include Maharashtra, Madhya Pradesh, Uttar Pradesh, West Bengal and Karnataka, and the smaller states include Goa, Sikkim, Arunachal Pradesh and UTs.

- The ceiling on poll expenditure in UT of Jammu and Kashmir has been raised to 95 lakhs. For Assembly constituencies, expenditure limits have been enhanced from 28 lakh rupees 40 lakh rupees in bigger states and from 20 lakhs to 28 lakhs in smaller states.

  Last major revision in the election expenditure limit was carried out in 2014, which was further increased by 10 percent in 2020.

- EC had formed a Committee to study the cost factors and other related issues, and make suitable recommendations.

Recommendations on State Funding

- Indrajit Gupta Committee (1998): It stated that state funding would ensure a level playing field for poorer political parties and argued that such a move would be in public interest.

- Law Commission Report (1999): It observed that a state funding of elections is 'desirable' provided that political parties are prohibited from taking funds from other sources.

- National Commission to Review the Working of the Constitution (2000): It did not support the idea but highlighted that an appropriate framework for the regulation of political parties needs to be implemented before state funding is considered

1.20 Lokur Commission

- The Supreme Court on Friday stayed all proceedings before Justice Madan Lokur Commission, set up by the West Bengal government to inquire into the alleged interception of mobile phones using military grade spyware Pegasus, disapproving breach of undertaking by the state for halting the commission's work when the SC was seized of the pan-India issue.

- The West Bengal government had, in July 2021, set up a Commission of Inquiry (Lokur Commission), under the 1952 Act, to look into the alleged surveillance of phones using the Pegasus spyware developed by the Israeli cyber-intelligence company NSO Group.

- The Commission will look into the alleged breach of privacy of several individuals.

- While both central and state governments can set up such Commissions of Inquiry, states are restricted by subject matters that they are empowered to legislate upon.

- If the central government set up the commission first, then states cannot set up a parallel commission on the same subject matter without the approval of the Centre.

- But if a state has appointed a Commission, then the Centre can appoint another on the same subject if it is of the opinion that the scope of the inquiry should be extended to two or more states.

- Under The Commissions of Inquiry Act, 1952, a Commission set up by the government shall have the powers of a civil court, while trying a suit under the Code of Civil Procedure, 1908.

- This means that the Commission has powers to summon and enforce the attendance of any person from any part of India and examine her on oath, and receive evidence.

- It can order requisition of any public record or copy from any court or office.

- Commissions set up by the central government can make an inquiry into any matter relatable to any of the entries in List I (Union List) or List II (State List) or List III (Concurrent List) in the Seventh Schedule to the Constitution, while Commissions set up by state governments can look into entries in List II or List III.

1.21 Kerala's Silver Line Project

- The project entails building a semi high-speed railway corridor through the state linking its southern end and state capital Thiruvananthapuram with its northern end of Kasaragod.

- The line is proposed to be 529.45 kms long, covering 11 districts through 11 stations.

- When the project is realised, one can travel from Kasaragod to Thiruvananthapuram in less than four hours on trains travelling at 200 km/hr. The current travel time on the existing Indian Railways network is 12 hours.

- The deadline for the project, being executed by the Kerala Rail Development Corporation Limited (KRDCL), is 2025.

- KRDCL, or K-Rail, is a joint venture between the Kerala government and the Union Ministry of Railways.

- There are several concerns around the project. Critics feel that the massive cost will push the State further into debt.

- There is scepticism about the projected passenger patronage.

- But most of all, there are environmental concerns in the backdrop of the 2018 deluge that inundated almost the entire State.

- There's fear that the project's embankment will divide the State into two and stifle free movement of water

1.22 Local Brand Namdapha Goodness

- North Eastern Region Community Resource Management Society (NERCRMS), Meghalaya in collaboration with Changlang Community Resource Management Society (CCRMS), Arunachal Pradesh launched Local Brand Namdapha Goodness in Changlang, Arunachal Pradesh.

- It is named after iconic Namdapha National Park located in the Changlang district, Namdapha.

- This initiative is to boost the sale of locally produced goods of the CBO members and to generate sustainable employment opportunities among the village communities and unemployed youths through the manufacturing, marketing and distribution related activities.

- Currently, a variety of products including edibles such as banana chips; spices such as ginger and turmeric powder, bakery items, locally spun clothes and sanitary napkins is being marketed under the brand.

- North Eastern Region Community Resource Management Society (NERCRMS) is a registered society under the aegis of North Eastern Council (NEC) and Ministry of Development of North Eastern Region (MDoNER), Govt. of India

1.23 Good Governance Index 2021

- Good Governance Index 2021 was launched on the occasion of the Good Governance Day (December 25).

About the GGI

- Prepared by the Department of Administration Reforms and Public Grievances (DARPG).

- The objectives of GGI are to provide quantifiable data to compare the state of governance in all states and union territories, enable them to formulate and implement suitable strategies for improving governance and shift to result oriented approaches and administration.

- The GGI 2021 framework covered 10 sectors and 58 indicators:

- The sectors are agriculture and allied sectors, commerce and industries, human resource development, public health, public infrastructure and utilities, economic governance, social welfare and development, judicial and public security, environment and citizen-centric governance.

- The GGI 2020-21 categorizes states and union territories into four categories:

- Other states – Group A; other states – group B; North-East and hill states and union territories.

Performance of various states

- Gujarat has topped the composite ranking, followed by Maharashtra and Goa.

- As many as 20 states have improved their composite GGI scores in 2021.

- Delhi has topped the union territories category composite ranking.

- Among the sectors, Uttar Pradesh secured top position in the commerce and industry sector.

- In the Northeast and Hill States category, Mizoram, and Jammu and Kashmir have registered an overall increase of 10.4 per cent and 3.7 per cent respectively over GGI 2019.

1.24 Shyama Prasad Mukherji Rurban Mission (SPMRM)

- Telangana stood first in the implementation of the Shyama Prasad Mukherji Rurban Mission (SPMRM).
- Tamil Nadu and Gujarat took the second and third positions respectively.

About Shyama Prasad Mukherji Rurban Mission

- Launched in 2016, the programme is designed to deliver catalytic interventions to rural areas on the threshold of growth.
- It is now a Centrally Sponsored Scheme.
- **Funding:** Shared between the Centre and the State in a ratio of 60:40 for Plain area States and 90:10 for Himalayan and NE States.
- Main objective of the scheme is bridging the rural-urban divide-viz: economic, technological and those related to facilities and services
- Under the mission, the Central government in coordination with the district administration has taken measures to bring about multi-layered phased development of the rural gram panchayats and villages on the lines of urban cities with proper civic amenities keeping the soul of villages intact.
- A 'Rurban cluster', would be a cluster of geographically contiguous villages with a population of about 25000 to 50000 in plain and coastal areas and with a population of 5000 to 15000 in desert, hilly or tribal areas.
- These clusters typically illustrate potential for growth, have economic drivers and derive locational and competitive advantages.
- According to the 2011 Census, India has more than 6 lakh villages while there are around 7,000 towns and urban centres. -Out of a total population the rural population accounts for 69% and urban population 31%.
- About 70% of the population lives in rural areas and about 50% of the overall labour force is still dependent on agriculture that is not productive enough.
- Large parts of rural areas in the country are not stand-alone settlements but part of a cluster of settlements, which are relatively proximate to each other.
- These clusters typically illustrate potential for growth, have economic drivers and derive locational and competitive advantages.
- These clusters, once developed, can then be classified as 'Rurban.

1.25 Financial Resolution And Deposit Insurance (FRDI) Bill

- The Finance Ministry has sought views of the Reserve Bank of India (RBI) on drafting a modified version of the Financial Resolution and Deposit Insurance (FRDI) Bill in order to deal with Insolvency of Firms in the financial sector.

- In 2018, the Government had withdrawn the FRDI Bill 2017 amid concerns over the security of bank deposits.

- The FRDI Bill, 2017 was meant to address the issue of insolvency of firms in the financial sector.

- If a bank, NBFC, an insurance company, a pension fund or a mutual fund-run by an asset management company fails, a quick solution is available to sell that firm, merge it with another firm, or close it down, with the least disruption to the system and other stakeholders.

- It aimed to limit the fallout of the failure of institutions like banks, insurance companies, non-banking financial companies, pension funds and stock exchanges.

- The Bill was withdrawn due to concerns among the public over safety of deposits despite assurances by the Central government.

- A key point of criticism was the so-called bail-in clause in the Bill that said in case of insolvency in a bank, the depositors will have to bear a part of the cost of the resolution by a corresponding reduction in their claims.

About the New Bill

- The bill will provide for establishing a resolution authority, which would have powers to undertake prompt resolution for banks, insurance companies and systemically important financial firms

- The legislation will also provide for an insurance of up to Rs 5 lakh for bank depositors, which already has a legal backing.-Even as the RBI has come out with a Prompt Corrective Action framework for NBFCs (Non Banking Financial Companies), a need is being felt for a legislative backing for the entire financial sector.

- The current resolution regime is especially inappropriate for private sector financial firms in the light of significant expansion and many of this acquiring systemically important status in India.

- The provision of a single agency for resolution of financial firms is in line with the recommendations made by the Financial Sector Legislative Reforms Commission (FSLRC), 2011 headed by Justice B N Srikrishna.

- The Insolvency and Bankruptcy Code, 2021 along with the FRDI bill would have streamlined the procedure for the winding up or revival of an ailing financial sector firm.

1.26 Protection Of Women From Sexual Harassment (POSH) Act, 2013

- A petition has been filed in the Supreme Court challenging guidelines issued by the Bombay High Court in cases under the Protection of Women from Sexual Harassment (POSH) Act, 2013.

- The provision that challenged pertains to blanket bar on parties and advocates from sharing records, including orders and judgments, with the media.

- The guidelines were formed by Justice G.S. Patel of the Bombay High Court ostensibly to protect the identities of the parties in a case under the POSH Act.

- The petitioner argued that a blanket bar is against the freedom of speech and expression enshrined under Article 19.

- The petition said a well-informed citizenry governs itself better.

- Right to free speech can be curbed only if it interferes with the administration of justice.

- Any injunction on the right of the people to know true and accurate facts is an encroachment on their right to information.

- It can serve as a tool for powerful men to continue sexually harassing women and thereafter suppressing their voices on social media and in the news media.

- In matters of social justice and women empowerment, public discourse plays a crucial role in shaping the nature of legal entitlements that are delivered to women.

- The order may have a "ripple effect" and deter survivors from approaching courts as well as setting a dangerous precedent for trial cases.

- The legitimise undue protection to sexual offenders in gross violation of principles of open court and fundamental rights of survivors.

- An open court serves an educational purpose.

- The court becomes a platform for citizens to know how the practical application of the law impacts upon their rights.

1.27 Protection of Women Against Sexual Harassment Act, 2013

- The Supreme Court in a landmark judgement in the Vishakha and others v State of Rajasthan 1997 case gave 'Vishakha guidelines'.

- These guidelines formed the basis for the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 ("Sexual Harassment Act").

- The Act defines sexual harassment at the workplace and creates a mechanism for redressal of complaints.

- Every employer is required to constitute an Internal Complaints Committee at each office or branch with 10 or more employees.

- The Complaints Committees have the powers of civil courts for gathering evidence.

- The Complaints Committees are required to provide for conciliation before initiating an inquiry if requested by the complainant.

- Penalties have been prescribed for employers. Non-compliance with the provisions of the Act shall be punishable with a fine.

- Repeated violations may lead to higher penalties and cancellation of license or registration to conduct business.

- The State Government will notify the District Officer in every district, who will constitute a Local Complaints Committee (LCC) so as to enable women in the unorganised sector or small establishments to work in an environment free of sexual harassment.

1.28 Use Of Drones

- The Ministry of Civil Aviation has suggested to the other Ministries to promote effective use of Drone technology.

- This suggestion was made as part of the initiatives to make India a global hub for drones under the Atmanirbhar Bharat Abhiyan and in the backdrop of the Union Government rolling out the liberalised Drone Rules 2021.

- Drones offer tremendous benefits to almost every sector of the economy, national defence, agriculture, law enforcement, and mapping, among others.

- Drone is a layman terminology for Unmanned Aircraft (UA).

- Originally developed for the military and aerospace industries, drones have found their way into the mainstream because of the enhanced levels of safety and efficiency they bring.

- A drone's autonomy level can range from remotely piloted (a human controls its movements) to advanced autonomy, which means that it relies on a system of sensors and LIDAR detectors to calculate its movement.

Application of Drone Technology

- Drone system can be used as a symmetric weapon against terrorist attacks.

- Drones can be integrated into the national airspace system.

- Deployment of drones for combat, communication in remote areas, counter-drone solutions can be done.

- Recently, the Ministry of Civil Aviation has approved a project with the Telangana government for using drone technology to deliver vaccines in remote areas.

- In the agriculture sector, micronutrients can be spread with the help of drones.

- It can also be used for performing surveys for identifying the challenges faced by the farmers.

- The drone technology in the SVAMITVA scheme launched by the Government of India, within less than a year, has helped about half a million village residents to get their property cards by mapping out the abadi areas.

- Drones can be used for real-time surveillance of assets and transmission lines, theft prevention, visual inspection/maintenance, construction planning and management, etc

- They can be used for anti-poaching actions, monitoring of forests and wildlife, pollution assessment, and evidence gathering.

- Drones are also significant for the law enforcement agencies, the fire and emergency services wherever human intervention is not safe and the healthcare services.

Risks

- Increased Risk of Armed Attacks: Operation of drones without any adequate legal backing can pose several security threats.

- Incidents of arms being dropped by drones are also there such as the recent Jammu drone attacks.

- They can be put to destructive use, to slam into critical targets, destroy infrastructure and so on.

- Paramilitary Not Exempted from the Rules: The drone rules 2021 are not applicable to the army, navy or the air force.

- However, it still includes paramilitary forces. BSF is suffering a lot of issues due to the drones coming across the lines.

- Cheaper Cost Enables a Larger -Population to Procure Drones: Drones are relatively cheaper in comparison to conventional weapons and yet can achieve far more destructive results which is the primary reason for increased number of drone attacks.

- Delivery of Mass Destruction Weapons: What makes combat drones most dangerous is the threat of them being used to deliver weapons of mass destruction.

- Procurement of combat drones by non-state actors poses serious threats.

1.29 Emergency Credit Line Guarantee Scheme (ECLGS)

- According to the SBI Research report on ECLGS:

- The scheme has saved 13.5 lakh firms from going bankrupt and consequently 1.5 crore jobs.

- In absolute terms, MSME loan accounts worth Rs 1.8 lakh crore were saved.

- Almost 93.7 per cent of such accounts are in the micro and small category.

- Amongst the states, Gujarat has been the biggest beneficiary, followed by Maharashtra, Tamil Nadu and Uttar Pradesh.

About the scheme

- The scheme was launched as part of the Aatmanirbhar Bharat Abhiyan package announced in May 2020 to mitigate the distress caused by coronavirus-induced lockdown, by providing credit to different sectors, especially Micro, Small and Medium Enterprises (MSMEs).

- 100% guarantee coverage is being provided by the National Credit Guarantee Trustee Company, whereas Banks and Non Banking Financial Companies (NBFCs) provide loans.

- The credit will be provided in the form of a Guaranteed Emergency Credit Line (GECL) facility.

- No Guarantee Fee shall be charged by NCGTC from the Member Lending Institutions (MLIs) under the Scheme.

- Interest rates under the Scheme shall be capped at 9.25% for banks and FIs, and at 14% for NBFCs.

Eligibility

- In August 2020, the scheme was extended to Mudra borrowers and Individual loans for business purposes.

- On Nov 20, the scheme was extended through ECLGS 2.0 for 26 sectors identified by the Kamath Committee and for the Health Care sector up to Mar 21, for entities with outstanding credit of above Rs.50 crore and not exceeding Rs.500 crore.

Benefits of the scheme

- The scheme is expected to provide credit to the sector at a low cost, thereby enabling MSMEs to meet their operational liabilities and restart their businesses.

- By supporting MSMEs to continue functioning during the current unprecedented situation, the Scheme is also expected to have a positive impact on the economy and support its revival

1.30 Swachh Vidyalaya Puraskar (SVP) 2021 – 2022

- Shri Subhas Sarkar, Minister of State for Education virtually launched Swachh Vidyalaya Puraskar (SVP) 2021 – 2022. The schools have been given sufficient time till March 2022 to apply for the awards so that they can do so at an appropriate and safe time.

- The Swachh Vidyalaya Puraskar recognise, inspire and award the schools who have undertaken exemplary work in the field of water, sanitation and hygiene and also provides a benchmark and roadmap for schools to make further improvements in future.

- In order to create self-motivation and awareness about sanitation the Swachh Vidyalaya Puraskar (SVP) was first instituted by the Department of School Education and Literacy, in 2016-17.

- The SVP 2021-22 is open to all categories of schools. i.e. Government, Government aided and Private schools in both rural and urban areas.

- The schools will be assessed through an online portal & mobile app in 6 sub-categories.

- These are: Water, Sanitation, Hand Washing with soap, Operation and Maintenance, Behaviour Change and Capacity Building and the newly added category on COVID-19 Preparedness and Response and the system will generate the overall score and rating automatically.

- Schools shall be awarded at the District, State and National level based on an internationally recognized five star rating system.

- Also, every school will get a certificate of participation showing the category-wise scores and overall rating of the school.

- At the National level, 40 schools will be -selected for awards this year under the overall category.

- The award money for the schools has been enhanced this year from Rs. 50,000/- to Rs. 60,000/- per school, under Samagra Shiksha scheme. Also, 6 sub-category wise awards have been introduced for the first time, with award money of Rs. 20,000/- per school.

1.31 India State Of Forest Report-2021

- The Union Ministry of Environment, Forests and Climate Change (MoEFCC) released the India State of Forest Report-2021.

- In October, 2021 an amendment was proposed by MoEFCC to the Forest (Conservation) Act, 1980 to bring significant changes to forest governance in India.

- It is an assessment of India's forest and tree cover, published every two years by the Forest Survey of India.

- The first survey was published in 1987, and ISFR 2021 is the 17th.

- India is one of the few countries in the world that brings out such a survey every two years, and this is widely considered comprehensive and robust.

- The ISFR is used in planning and formulation of policies in forest management as well as forestry and agro forestry sectors.

- Three categories of forests are surveyed – very dense forests (canopy density over 70%), moderately dense forests (40-70%) and open forests (10-40%).

- Scrubs (canopy density less than 10%) are also surveyed but not categorised as forests

New Features of ISFR 2021

- It has for the first time assessed forest cover in tiger reserves, tiger corridors and the Gir forest which houses the Asiatic lion.

- The forest cover in tiger corridors has increased by 37.15 sq km (0.32%) between 2011-2021, but decreased by 22.6 sq km (0.04%) in tiger reserves.

- Forest cover has increased in 20 tiger reserves in these 10 years, and decreased in 32.

- Buxa (West Bengal), Anamalai (Tamil Nadu) and Indravati reserves (Chhattisgarh) have shown an increase in forest cover while the highest losses have been found in Kawal (Telangana), Bhadra (Karnataka) and the Sunderbans reserves (West Bengal).

- Pakke Tiger Reserve in Arunachal Pradesh has the highest forest cover, at nearly 97%.

Findings of the Report

- The forest and tree cover in the country continues to increase with an additional cover of 1,540 square kilometres over the past two years.

- India's forest cover is now 7, 13, 789 square kilometres, 21.71% of the country's geographical area, an increase from 21.67% in 2019.

- Tree cover has increased by 721 sq km.
- Tree cover is defined as all tree patches of size less than one hectare occurring outside the recorded forest area. This covers trees in all formations including scattered trees.

Increase/Decrease in Forests

- The states that have shown the highest increase in forest cover are Telangana (3.07%), Andhra Pradesh (2.22%) and Odisha (1.04%).
- Five states in the Northeast – Arunachal Pradesh, Manipur, Meghalaya, Mizoram and Nagaland have all shown loss in forest cover.

States with Highest Forest Area/Cover

- Area-wise: Madhya Pradesh has the largest forest cover in the country followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.
- In terms of forest cover as percentage of total geographical area, the top five States are Mizoram, Arunachal Pradesh, Meghalaya, Manipur and Nagaland.
- The term 'forest area' denotes the legal status of the land as per the government records, whereas the term 'forest cover' indicates presence of trees over any land.

Mangroves

- Mangroves have shown an increase of 17 sq km. India's total mangrove cover is now 4,992 sq km.

Forest Prone to Fires

- 35.46% of the forest cover is prone to forest fires. Out of this, 2.81% is extremely prone, 7.85% is very highly prone and 11.51% is highly prone.
- By 2030, 45-64% of forests in India will experience the effects of climate change and rising temperatures.
- Forests in all states (except Assam, Meghalaya, Tripura and Nagaland) will be highly vulnerable climate hot spots. Ladakh (forest cover 0.1-0.2%) is likely to be the most affected.

Total Carbon Stock

- The total carbon stock in the country's forests is estimated at 7,204 million tonnes, an increase of 79.4 million tonnes since 2019.
- Forest carbon stock is the amount of carbon that has been sequestered from the atmosphere and is now stored within the forest ecosystem, mainly within living biomass and soil, and to a lesser extent also in dead wood and litter.
- Bamboo forests have grown from 13,882 million culms (stems) in 2019 to 53,336 million culms in 2021.

1.32 <u>**New Rehabilitation & Resettlement Policy**</u>

- Union Minister of Coal Pralhad Joshi said that NLC India Ltd, a Navratna public sector enterprise under the Ministry of Coal has been playing a pivotal role in ensuring India's energy security during the last six decades of performance.

- The Minister was virtually launching the new rehabilitation & resettlement (R& R) policy applicable to land owners of NLCIL mines area.

- Lauding the efforts of NLCIL and Tamil Nadu Government in framing a very flexible rehabilitation policy with multiple options available to the affected people, Minister Shri Joshi ensured that compensation to the affected villagers will be based on fair and transparent process.

- The new policy has provisions for enhanced amenities to project effected families. NLCL has signed an MOU with Tamil Nadu government to impart skill development to the youth under Skill India Mission.

- NLCIL commenced its operations in Tamil Nadu way back in 1956 in lignite mining and lignite based power generation.

- Over a period of more than six decades, the company has diversified into coal based Power Generation, Renewable Power Primarily Solar and Coal Mining.

- In this process, the Company has made PAN India presence with 50.60 MTPA mining and 6,061 MW power generating capacity.

2. INTERNATIONAL RELATIONS

2.10 Asian Infrastructure Investment Bank (AIIB)

- Recently, former Reserve Bank of India (RBI) governor Urjit Patel has been appointed vice-president of the Beijing-based Asian Infrastructure Investment Bank (AIIB).

  ➢ In October 2021, the Union Minister of Finance participated in the 6th Annual Meeting of the Board of Governors of AIIB.

Key Points

About:

- It is a multilateral development bank with a mission to improve social and economic outcomes in Asia.

- It aims to connect people, services and markets that over time will impact the lives of billions and build a better future by investing in sustainable infrastructure and other productive sectors.

- It is established by the AIIB Articles of Agreement (entered into force December 2015) which is a multilateral treaty.

- It is headquartered in Beijing (China) and began its operations in January 2016.

Various Organs of AIIB: Board of Governors

- The Board of Governors consists of one Governor and one Alternate Governor appointed by each member country. Governors and Alternate Governors serve at the pleasure of the appointing member.

Board of Directors

- Non-resident Board of Directors is responsible for the direction of the Bank's general operations, exercising all powers delegated to it by the Board of Governors.

Senior Management

- AIIB staff is headed by the President who is elected by AIIB shareholders for a five- year term and eligible for re-election once.

International Advisory Panel

- The Bank has established an International Advisory Panel (IAP) to support the President and Senior Management on the Bank's strategies and policies as well as on general operational issues.

Key Accomplishments of AIIB

Rapid Growth in Worldwide Membership

- AIIB began operations in 2016 with 57 founding Members (37 regional and 20 non regional). By the end of 2020, it had 103 approved Members representing approximately 79% of the global population and 65% of global GDP.

Highest Credit Rating Assigned by Three Major Rating Institutions

- Since 2017, AIIB has received AAA ratings with a stable outlook from the top credit rating agencies— Standard & Poor's, Moody's and Fitch.

- Industry recognition of its sound financial standing has enabled it to expand its presence in international capital markets.

Permanent Observer Status in the United Nations

- In 2018, AIIB was granted Permanent Observer status in the deliberations of both the United Nations General Assembly and the Economic and Social Council, the two development-focused principal organs of the global body.

Governance Model Enhancing Efficiency and Accountability

- AIIB has created an effective environment for its Board of Directors to take a strategic approach to direct and oversee the work of an accountable management.

- The Bank's Accountability Framework is an innovative governance model that positions AIIB to embed a culture of accountability throughout the organization.

Policies and Strategies Developed or Finalized

- Strategies for all major infrastructures sectors and for investing in equity, mobilizing private capital and financing operations in non regional members have all been approved and being implemented.

AIIB and India

- The AIIB has approved more loans for India than any other member of the bank.

- China is its biggest shareholder and India is the second-largest. The AIIB has funded 28 projects in India amounting to USD6.7 billion.

- It has recently emphasised green projects and supporting public health initiatives during the Covid-19 pandemic, besides infrastructure.

- In October 2021, India applied for loans from the AIIB and Asian Development Bank (ADB) to procure 667 million doses of Covid-19 vaccines with the ADB expected to lend USD1.5 billion and the AIIB around USD500 million, under the ADB's Asia Pacific Vaccine Access Facility (APVAX) initiative.

- Last year (2021), the AIIB also approved a USD356.67 million loan to the Indian government to support the expansion of the Chennai metro rail system.

2.11 India-China-Sri Lanka Triangle

- Recently, the Chinese Foreign Minister (CFM) visited Sri Lanka.
  - At a meeting, CFM proposed a forum for Indian Ocean island nations and also asserted that no "third party" should interfere in China-Sri Lanka ties.
  - While the name of the third party was not revealed, it was a clear reference to India.

Key Points

Highlights of CFM Visit to Sri Lanka

- The CFM visit envisaged launching celebrations marking the 70th anniversary of the historic Rubber-Rice Pact 1952 and the 65th anniversary of the establishment of diplomatic relations between China and Sri Lanka.

  ➢ Under the Rubber-Rice Pact, China needed to import rubber and other supplies and Sri Lanka, for whom rubber was a key export, was facing a rise in the price of rice and a slump in the price of rubber.

- CFM asserted that the two sides should make good use of "the two engines", referring to the Colombo Port City in Colombo and the Hambantota Port (also in Sri Lanka).

- He urged Sri Lanka to consider the prospects of the Regional Comprehensive Economic Partnership (RCEP) and restart talks on a free-trade agreement.

- A "forum on the development of Indian Ocean island countries" to build consensus and synergy and promote common development, was also proposed.

About China-Sri Lanka Ties

- Largest Creditor to Sri Lanka: China is the largest bilateral creditor to the country.

  ➢ Its loans to the Sri Lankan public sector amount to 15% of the central government's external debt.

  ➢ Sri Lanka heavily relies on Chinese credit to address its foreign debt burden.

- Investment in Infrastructure Projects: China has invested about USD 12 billion in Sri Lanka's infrastructure projects between 2006-19.

- Shifting Interests of Smaller Nations: Sri Lanka's economic crisis may further push it to align its policies with China's interests.

- China's Pursuit in the Indian Ocean: China enjoys friendlier waters in South Asia and the Indian Ocean than it does in Southeast Asia and the Pacific.

➢ China faces opposition from Taiwan, territorial disputes in the South China Sea and East Asia, and myriad frictions with the US and Australia.

India's Concerns

- Opposition to SAGAR Initiative: The proposed Indian Ocean island countries forum sounded in opposition to Prime Minister of India's SAGAR (Security and Growth for All in the Region) initiative.
  ➢ SAGAR is India's strategic vision for the Indian Ocean Region (IOR).
- Issues Emanating from Two Engines of Growth: China has formal control over Sri Lanka's Hambantota port as a part of a 99-year lease.
  ➢ Sri Lanka has decided to establish a Special Economic Zone around the Colombo port city and a new economic commission, to be funded by China.
  ➢ The Colombo port handles 60% of India's trans-shipment cargo.
  ➢ Leasing of Hambantota and the Colombo Port City project makes it almost certain for the Chinese navy to have a permanent presence in the Indian Ocean which will be worrisome for India's national security.
  ➢ This Chinese strategy to encircle India is referred to as the Strings of Pearls Strategy.
- Influencing India's Neighbours: Other South Asian nations like Bangladesh, Nepal and the Maldives have also been turning to China to finance large-scale infrastructure projects.

Way Forward

- Preserving Strategic Interests: Nurturing the Neighbourhood First policy with Sri Lanka is important for India to preserve its strategic interests in the Indian Ocean region.
- Taking Advantage of Regional Platforms: Platforms like the BIMSTEC, SAARC, SAGAR and the IORA could be leveraged to foster cooperation in fields like technology-driven agriculture, marine sector development, IT & communication infrastructure etc.
- Restraining Chinese Expansion: India will need to continue to work on the Kankesanturai port in Jaffna and the oil tank farm project in Trincomalee to ensure that China does not make any further inroads in Sri Lanka.
  ➢ Both countries can also cooperate on enhancing private sector investments to create economic resilience.
- Leveraging India's Soft Power: In the technology sector, India can create job opportunities in Sri Lanka by expanding the presence of its IT companies.
  ➢ These organizations can create thousands of direct and indirect jobs and boost the island nation's service economy.

2.12 American Sanctions over North Korea

- Recently, the US has imposed its first sanctions over North Korea's weapons programs following a series of North Korean missile launches.
  - ➢ These sanctions were aimed both to prevent the advancement of North Korea's programs and to impede its attempts to proliferate weapons technologies.
  - ➢ North Korea is continuing its missile program despite several UN Security Council resolutions and the international community's calls for diplomacy and denuclearization.

Key Points

- Origin of Divide in Korean Peninsula:
- The present-day conflict between the US and North Korea can be traced from the Cold War between the USSR and US.
- After the defeat of Japan in World War II, the Allied forces at the Yalta Conference (1945), agreed to establish a "four-power trusteeship over Korea".
- The fear of the spread of communism (state ownership over economic resources of a country) and the mutual distrust between the USSR and the US led to the failure of the trusteeship plan.
  - ➢ Before a concrete plan could be formulated, the USSR invaded Korea.
  - ➢ This led to a condition where the north of Korea was under the USSR and the south under the rest of the allies, mainly the US.
  - ➢ The Korean peninsula was divided into two regions by the 38th parallel.
- In 1948 the United Nations proposed free elections across all of Korea.

- ➢ The USSR rejected this plan and the northern part was declared as Democratic People's Republic of Korea (North Korea).
- ➢ The election took place in the American protectorate resulting in the establishment of the Republic of Korea (South Korea).
- Both North Korea and South Korea tried to enhance their reach, territorially and ideologically, which gave birth to the Korean Conflict.

The Korean War

- On 25th June 1950, North Korea, backed by the USSR, launched an attack on South Korea and occupied most of the country.
  - ➢ In response, the United Nations force led by the US retaliated.
- In 1951 the US forces led by Douglas MacArthur crossed the 38th parallel and triggered the entry of China in support of North Korea.
  - ➢ To prevent further escalation, peace talks began later in 1951.
- India was actively involved in negotiating peace in the Korean peninsula by engaging all the major stakeholders – US, USSR and China.
  - ➢ In 1952, the Indian resolution on Korea was adopted at the United Nations (UN).
- On 27th July 1953, the Korean Armistice Agreement was signed between the UN Command, the Korean People's Army and the Chinese People's Volunteer Army.
  - ➢ It led to an official ceasefire without a Peace treaty. Thus, the war officially never ended.
- This also led to the establishment of the Korean Demilitarised Zone (DMZ) – a strip of land running across the Korean Peninsula to serve as a buffer zone between North Korea and South Korea.
- In December 1991, North and South Korea signed a pact agreeing to refrain from aggression.

US-North Korea Conflict

- During the Cold War era, (allegedly with the support of Russia and China) North Korea accelerated its nuclear programme and developed nuclear capabilities.
  - ➢ During the same time, the US extended its Nuclear Umbrella (guarantee of support during a nuclear attack) to its allies i.e South Korea and Japan.
- North Korea withdrew from the Non-Proliferation Treaty (NPT) in 2003 and afterwards, under present leader Kim Jong-un, it increased nuclear missile testing.
  - ➢ North Korea is barred from testing ballistic missiles and nuclear weapons under international law.
- In response to this, the US started deploying THAAD (Terminal High Altitude Area Defence) in South Korea in March 2017.

- The territorial conflict which started between North and South Korea has transformed into a tussle between the US and North Korea.
- Following the failure of diplomatic efforts to improve relations with North Korea, the US has imposed sanctions.

India's Stand

- India has consistently voiced its opposition to North Korean nuclear and missile tests. However, it has maintained a neutral stance regarding sanctions.

2.13 NATO-Russia Council Talks

- Recently, the North Atlantic Treaty Organisation (NATO) and Russia discussed the ongoing situation in Ukraine and its implications for security in Europe at the NATO-Russia Council (NRC) in Brussels.
  - ➤ Talks between representatives of NATO and Russia concluded without a clear outcome.

Key Points

NATO-Russia Council

- NRC was established at the NATO-Russia Summit in Rome (Rome Declaration) on 28 May 2002.
  - ➤ It replaced the Permanent Joint Council (PJC), a forum for consultation and cooperation created by the 1997 NATO-Russia Founding Act on Mutual Relations.
- The NRC is a mechanism for consultation, consensus-building, cooperation, joint decision and joint action, in which the individual NATO member states and Russia work as equal partners on a wide spectrum of security issues of common interest.

Highlights of the Meet

- NATO rejected Russia's demand for a new security settlement in Europe, challenging Russia to withdraw troops deployed near Ukraine and join talks on reducing the threat of open conflict.
  - ➤ For the US and EU, Ukraine acts as a significant buffer with Russia. Ukraine is also building a naval base in Ochakiv and another in Berdyansk, which Russia is not happy about.
- The Western allies received no promise that Russia will stand down its forces — which Moscow insists pose no threat to its already partially occupied neighbour — despite the threat of economic sanctions.
- Russia demanded not to admit any more members into NATO and to withdraw western forces from its Eastern Allies. It also warned that the continued deterioration could lead to the "most unpredictable and most dire consequences for European security."
  - ➤ There are significant differences between NATO allies and Russia which will not be easy to bridge.

India's Stance over Russia Ukraine Crisis

- India did not join the Western powers' condemnation of Russia's intervention in Crimea and kept a low profile on the issue.

- In November 2020, India voted against a Ukraine-sponsored resolution in the United Nations (UN) that condemned alleged human rights violations in Crimea thereby backing old ally Russia on the issue.

North Atlantic Treaty Organisation

- It is a military alliance established by the North Atlantic Treaty (also called the Washington Treaty) of April, 1949, by the United States, Canada, and several Western European nations to provide collective security against the Soviet Union.

- A key provision of the treaty, the so-called Article 5, states that if one member of the alliance is attacked in Europe or North America, it is to be considered an attack on all members. That effectively put Western Europe under the "nuclear umbrella" of the US.

- As of 2019, there are 29 member states, with Montenegro becoming the latest member to join the alliance in 2017.

Puerto Rico, French Guiana, Hawaii and other territories outside the NATO core area are under member jurisdiction but not protected by the collective defense clause.

NORTH MACEDONIA

NATO MEMBER COUNTRIES

Way Forward

- A practical solution for the situation is to revive the Minsk peace process. Therefore the West (US and Other western Countries) should push both sides to resume talks and live up to their commitments as per the Minsk agreement to restore relative peace on the border.

- The US should also seek agreement from all parties to engage more directly in an OSCE- mediated process to stem the ongoing damage to European security, the deepening human and economic costs, and the threat to Ukraine's sovereignty.

2.14 India and Oman

- The Secretary General of the Ministry of Defense of the Sultanate of Oman is on a visit to India.
  - ➢ He will be in Delhi to co-chair the Joint Military Cooperation Committee (JMCC) with India's Defence Secretary.

Key Points

Background

- The two countries across the Arabian Sea are linked by geography, history and culture and enjoy warm and cordial relations, which are attributed to historical maritime trade linkages.

- While people-to-people contact between India and Oman can be traced back 5000 years, diplomatic relations were established in 1955 and the relationship was upgraded to Strategic partnership in 2008. Oman has been a key pillar of India's West Asia Policy.
  - ➢ The Sultanate of Oman is a strategic partner of India in the Gulf and an important interlocutor at the Gulf Cooperation Council (GCC), Arab League and Indian Ocean Rim Association (IORA) fora.

- Gandhi Peace Prize 2019 was conferred on Late HM Sultan Qaboos in recognition of his leadership in strengthening the ties between India & Oman and his efforts to promote peace in the Gulf region.

Defence Relations

Joint Military Cooperation Committee

- The JMCC is the highest forum of engagement between India and Oman in the field of defence.

- The JMCC is expected to meet annually, but could not be organised since 2018 when the meeting of the 9th JMCC was held in Oman.

  ➤ The 10th JMCC is expected to comprehensively evaluate the ongoing defence exchanges and provide a roadmap for further strengthening defence ties in the coming years.

Military Exercises

- Army exercise: Al Najah

- Air Force exercise: Eastern Bridge

- Naval Exercise: Naseem Al Bahr

Economic & Commercial Relations

- Institutional mechanisms like Joint Commission Meeting (JCM) and Joint Business Council (JBC) oversee economic cooperation between India and Oman.

India is among Oman's top trading partners

  ➤ For Oman, India was the 3rd largest (after UAE and China) source for its imports and 3rd largest market (after UAE and Saudi Arabia) for its non-oil exports in 2019.

- Major Indian financial institutions have a presence in Oman. Indian companies have invested in Oman in sectors like iron and steel, cement, fertilisers, textile etc.

- India-Oman Joint Investment Fund (OIJIF), a JV between State Bank of India and State General Reserve Fund (SGRF) of Oman, a special purpose vehicle to invest in India, has been operational.

Indian Community in Oman

- There are about 6.2 lakh Indians in Oman, of which about 4.8 lakh are workers and professionals. There are Indian families living in Oman for more than 150-200 years. There are many Indian schools offering CBSE syllabus catering to the educational needs of about 45,000 Indian children.

Oman's Strategic Significance for India

About:

- Oman is India's closest defence partner in the Gulf region and an important anchor for India's defence and strategic interests.

  ➤ Oman is at the gateway of Strait of Hormuz through which India imports one-fifth of its oil imports.

- Defence cooperation has emerged as a key pillar for the robust India-Oman strategic partnership. Defence exchanges are guided by a Framework MOU which was recently renewed in 2021.

- Oman is the only country in the Gulf region with which all three services of the Indian armed forces conduct regular bilateral exercises and staff talks, enabling close cooperation and trust at the professional level.

- Oman also provides critical operational support to Indian naval deployments in the Arabian sea for anti-piracy missions.

- Bilateral training cooperation between the two sides is also robust with Omani forces regularly subscribing to training courses in India both at professional as well as higher command level. Indian armed forces also subscribe to the Staff and Command courses conducted in Oman.

- Oman also actively participates in the Indian Ocean Naval Symposium (IONS). India has supplied rifles to Oman. Also, India is considering setting up a defence production unit in Oman.

Port of Duqm

- In a strategic move to expand its footprint in the Indian Ocean region, India has secured access to the key Port of Duqm in Oman for military use and logistical support. This is part of India's maritime strategy to counter Chinese influence and activities in the region.

- The Port of Duqm is situated on the southeastern seaboard of Oman, overlooking the Arabian Sea and the Indian Ocean.

- It is strategically located, in close proximity to the Chabahar port in Iran. With the Assumption Island being developed in Seychelles and Agalega in Mauritius, Duqm fits into India's proactive maritime security roadmap.

- The Port of Duqm also has a special economic zone, where about USD 1.8 billion investments are being made by some Indian companies.

Way Forward

- India does not have enough energy resources to serve its current or future energy requirements. The rapidly growing energy demand has contributed to the need for long term energy partnerships with countries like Oman.

- Oman's Duqm Port is situated in the middle of international shipping lanes connecting East with West Asia.

- India needs to engage with Oman and take initiatives to utilise opportunities arising out of the Duqm Port industrial city.

- India should also work closely with Oman to enhance strategic depth in the region and add heft to its Indo-Pacific vision in the Western and Southern Part of Indian Ocean.

2.15 China-Lithuania Tensions

- Recently, the European Union launched action against China at the World Trade Organization (WTO) for targeting Lithuania over its stance on Taiwan.

Key Points

About the Issue

- In November 2021, a Taiwanese Representative Office was opened in Lithuania, notable because it is for the first time that Taiwan was allowed to use its own name to open an office within the EU.

- Following this, China has downgraded its diplomatic relations with Lithuania, calling it a violation of the "One China Policy". China has also unofficially boycotted products from Lithuania, whether it is sourced directly or indirectly from the country.

  ➤ China alleges that Lithuania is acting in concert with the American efforts of containment by using the Taiwan card, and to spread discord between China and Europe.

  ➤ 'One China Policy' means that countries seeking diplomatic relations with the People's Republic of China (PRC, Mainland China) must break official relations with the Republic of China (ROC, Taiwan) and vice versa.

Action at WTO

- By going to the WTO, the EU lent support to accusations by Lithuanian business leaders and officials that the row has resulted in China blocking imports from Lithuania and other economic restrictions.

  ➢ China's crackdown on Lithuanian imports affects other European nations as well.

  ➢ The country has also imposed trade restrictions on goods from countries like France, Germany and Sweden, which include parts from Lithuanian supply chains.

  ➢ The EU is currently China's largest trading partner, and about 80-90% of Lithuania's exports are based on manufacturing contracts with the rest of the EU.

- A 60-day window was launched for the two sides to come to a solution before moving the dispute to a panel.

Reasons for taking on China by Lithuania

Domestic Reasons

- Lithuania's current wave of assertive moves against China to a certain extent has been attributed to the change of government in 2020.

- The new Government of Lithuania espouses a "values-based" foreign policy based on democracy and freedom, and had explicitly offered support to the cause of Taiwan in 2020 itself.

Geopolitical Reasons

- It is also due to growing geopolitical tensions in Eastern Europe over EU and NATO's fallout with Lithuania's adversarial neighbours, Russia and Belarus.

  ➢ Lithuania, being the first constituent of the Soviet Union to break out as an independent state, has its own historical context and ideological rationale for standing up to China.

- The growing Sino-Russian partnership against the West has also made Lithuania wary of China.

Others

- Lithuania has been one of the biggest critics of China within the EU on the Xinjiang and Hong Kong issues.

- Lithuania supported Taiwan's pitch to become an observer at the World Health Organization in 2020 against China's opposition in the wake of the Covid-19 pandemic.

- Moreover, Lithuania's rationale that economic relations can be sustainable only with democratic regimes, has heightened tensions between Lithuania and China.

  ➢ In May 2021, Lithuania quit China's 17+1 cooperation forum with central and eastern Europe, by calling it "divisive", now it is 16+1.

  ➢ Lithuania is the first country in that group to have done so and stated economic non-reciprocity of China and threats to European unity as reasons for its exit.

- Citing security reasons, Lithuania has advised its population to avoid buying smart phones made in China, and has kept China away from acquiring controlling stakes in its Klaipėda seaport, as well as from its 5G infrastructure bids.
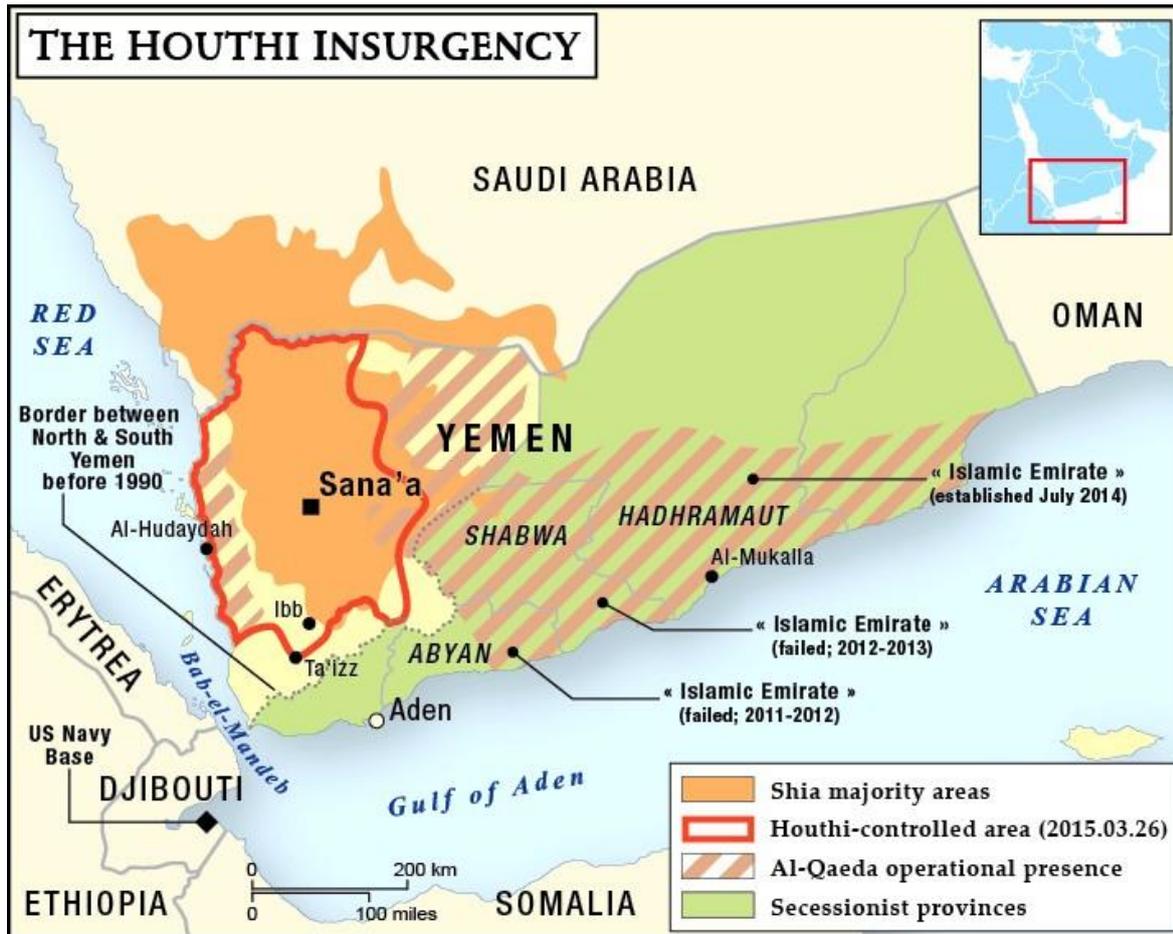
Geopolitical Fallout

- Taiwan has made efforts to compensate the Lithuanian economy from China's coercion.
  - ➢ About 20,000 bottles of Lithuanian rum that had been bound for China were bought by Taiwan offering a symbolic gesture of support.
  - ➢ Taiwan has come up with a USD 200 million investment plan to help cover Lithuania's economic losses.
  - ➢ This move is also supposedly designed to make Lithuania a gateway to Taiwan for accessing the EU market, especially given the current semiconductor supply shortages.
  - ➢ Taiwan is also planning to introduce a USD1 billion credit program aimed at benefiting Lithuanian businesses.
- The US has expressed concerns about China's attempts to coerce Lithuania over Taiwan, along with EU countries like Germany who have expressed solidarity with Lithuania.

Way Forward

- China's response suggests an attempt to, as Chinese strategists like to say, "kill the chicken to scare the monkeys", and ensure other countries do not contemplate a similar move.
- Beyond the Lithuania-China tensions, of particular salience to India is how the EU, as a major power, will take forward ties with China as it similarly weighs strategic considerations against a booming trading relationship.
  - ➢ China's use of trade as leverage and as a method of coercion, which stands in stark contrast to its declaration on the 50th anniversary of its UN membership, that it eschews "power politics" and "hegemony", is another matter of concern.
  - ➢ Lithuania is an exception in having both a trade surplus with China and no pressing need to access the China market.
- India shall closely watch the EU move to assess the benefits and costs of taking on China on a core concern — the Taiwan issue.

2.16 Houthis attack UAE

- Recently, a suspected drone attack in Abu Dhabi, the capital of the United Arab Emirates (UAE), caused multiple explosions in which two Indians were also killed.
  - ➢ The Shia Houthi rebels of Yemen, who have been controlling the northern parts of the country, including the capital Sana'a, for almost seven years, have claimed responsibility for the attack.
  - ➢ India has conveyed solidarity with the UAE in face of such unacceptable acts.
  - ➢ Earlier in 2021, there was a ballistic missile attack by the Houthis on the Saudi capital Riyadh.

THE HOUTHI INSURGENCY

Key Points

Houthis

- The roots of the Houthi movement can be traced to "Believing Youth" (Muntada al- Shahabal-Mu'min), a Zaydi revivalist group founded by Hussein al-Houthi and his father, Badr al-Din al-Houthi, in the early 1990s.

- Badr al-Din was an influential Zaydi cleric in northern Yemen. Inspired by the Iranian revolution of 1979 and the rise of Hezbollah in southern Lebanon in the 1980s, Badr al-Din and his sons started building vast social and religious networks among the Zaydis of Yemen, who make up roughly one-third of the Sunni-majority country's population.

- But when the movement turned political and started attacking the "corrupt" regime of Ali Abdullah Saleh (in Yemen) and his support for the US' war on terror, it became a thorn on Saleh's side.

- They called themselves Ansar Allah (Partisans of God), mobilising tribesmen in the north against the government.

- In 2004, Saleh's government issued an arrest warrant against Hussein al-Houthi. He resisted the arrest, starting an insurgency.

- In September 2004, the government troops attacked the rebels and killed Hussein. Since then, the government launched multiple military campaigns in Sa'dah, the Zaydi stronghold, to end the resistance, which was locally called the Houthis movement, after their "martyred" leader.
- But it only strengthened the Houthis, who, by 2010, when a ceasefire was reached, had captured Sa'dah from the government troops.

Zaydis

- Zaydis are the oldest branch of the Shia. The Zaydis are named after Zayd Bin Ali, the great grandson of Imam Ali, Prophet Mohammed's cousin and son-in-law who Shias, Sunnis and Zaydis revere.
- Zayd Bin Ali had led a revolt against the Ummayad Caliphate in the eighth century. He was killed, but his martyrdom led to the rise of the Zaydi sect. While the Zaydis are seen part of the Shia branch of Islam, both in terms of theology and practice, they are different from the 'Twelver' Shias of Iran, Iraq and Lebanon.
- For centuries, the Zaydis were a powerful sect within Yemen.
- After the collapse of the Ottoman Empire in 1918, the Zaydis would establish a monarchy (the Mutawakkilite Kingdom) in the country. But their dominance would come to an end in 1962 when the Egypt-backed republicans overthrew the monarchy.

Reason for Houthis Rise

- When protests broke out in Yemen in 2011 as part of the Arab Spring protests that felled Tunisian and Egyptian dictators, the Houthis, now confident from their military victories and the support they enjoyed in Sadah, backed the agitation.
- President Saleh, a Zaydi who was in power for 33 years, resigned in November 2011, handing the reins to his deputy, Abdrabbuh Mansur Hadi, a Saudi-backed Sunni. Yemen, under the tutelage of Saudi Arabia and the UAE, started a national dialogue to resolve internal differences.
- The Houthis were part of the dialogue. But they fell out with the transitional government of Mr. Hadi, claiming that the proposed federal solution, which sought to divide the Zaydi-dominated north into two land-locked provinces, was intended to weaken the movement.
- They soon got back to insurgency. Saleh, who was sidelined by the interim government and its backers, joined hands with his former rivals and launched a joint military operation. By January 2015, the Houthi-Saleh alliance had captured Sana'a and much of northern Yemen, including the vital Red Sea coast. (Later the Houthis turned against Saleh and killed him in December 2017).

Reason for Saudi Arabia's Attack on Yemen

- The rapid rise of the Houthis in Yemen set off alarm bells in Saudi Arabia which saw them as Iranian proxies.

- Saudi Arabia started a military campaign in March 2015, hoping for a quick victory against the Houthis. But the Houthis had dug in, refusing to leave despite Saudi Arabia's aerial blitzkrieg.

- With no effective allies on the ground and no way-out plan, the Saudi-led campaign went on with no tangible result. In the past six years, the Houthis have launched multiple attacks on Saudi cities from northern Yemen in retaliation for Saudi air strikes.

  In 2019, the Houthis claimed the attack on two Saudi oil installations that knocked out, briefly, half of the kingdom's oil output (the Houthi claim was disputed by experts and governments, who said the attack was too sophisticated for the rebels to carry out. The US has blamed Iran).

- The Houthis have established a government in the north. There are serious allegations against both the Saudis and the Houthis in the war.

- While the Saudi bombings caused a large number of civilian deaths, the Houthis were accused, by rights groups and governments, of preventing aid, deploying forces in densely populated areas and using excessive force against civilians and peaceful protesters.

Reason for Houthis Attacking UAE

- This is not the first time the Houthis attacked the UAE. In 2018, when the UAE-backed forces were making advances in Yemen, the Houthis claimed attacks against the Emirates.

- Since then, the UAE pulled out its troops from Yemen and offered tactical support to the Southern Transitional Council, a group of rebels based in Aden, that was also fighting the Saudi-backed government forces of UAE.

- During this period, the Houthis stayed focussed entirely on Saudi Arabia and Saudi-backed forces inside Yemen.

- But in recent months, Giants Brigades, a militia group largely made up of Southern Yemenis (backed by the UAE) and the Joint Forces (the militia led by a nephew of the slain former President Saleh) turned their guns against the Houthis.

- Now with the attacks the Houthis appear to have sent a clear message to the Emiratis — stay out of Yemen or face more attacks.

Concerns

- Yemen is strategically important because it sits on a strait linking the Red Sea with the Gulf of Aden, through which much of the world's oil shipments pass.

- It also worries the West because of the threat of attacks - such as from al-Qaeda or IS affiliates-emanating from the country as it becomes more unstable.

- The Houthis have escalated cross-border attacks on the kingdom even after the US delisted the rebels as terrorists and stepped up efforts to de-escalate the six-year conflict.

- The conflict is also seen as part of a regional power struggle between Shia-ruled Iran and Sunni-ruled Saudi Arabia.

India's Interest

- For India, it is a challenge which cannot be washed away taking into consideration the oil security and 8 million expats living in the region with more than USD 80 billion of incoming remittance annually.

Indian Initiatives

Operation Rahat

- India launched a massive air and sea operation to evacuate over 4000 Indian nationals from Yemen in April 2015.

Humanitarian Assistance

- India has provided food and medical aid to Yemen in the past and thousands of Yemeni nationals have availed of medical treatment in India over the past few years.

- India also continues to facilitate education of a large number of Yemeni nationals in various Indian institutions.

2.17 Davos Summit: World Economic Forum

- Recently, the Prime Minister addressed the World Economic Forum's (WEF) Davos Agenda via video conferencing.

  ➢ The WEF annual meeting in Davos (Switzerland) engages the world's top leaders to shape global, regional and industry agendas.

Key Points

One Earth, One Health

- During the course of Covid-19, India saved many lives by exporting essential medicines and vaccines by following its vision of "One Earth, One Health".

➢ India has delivered 1154.173 lakh doses of Covid-19 vaccines to 97 countries till 31st December 2021.

• India is the world's third-largest pharmaceutical producer and is considered 'pharmacy to the world'.

Pro-Planet People (P3) Approach

• Proposed the idea of the "P3 (Pro-Planet-People) movement" that underscores India's commitments to climate change at the global forum (UNFCCC COP 26).

➢ Reiterated India's "clean, green, sustainable, and reliable" energy goals which dwell on achieving a net-zero carbon emission target by 2070.

• Making LIFE (Lifestyle for Environment - given by the Indian PM at UNFCCC COP 26 Conference) into a mass movement can be a strong foundation for P3.

➢ LIFE is a vision of a resilient and sustainable lifestyle that will come handy in dealing with the climate crisis and other unpredictable challenges of the future. Throwaway culture and consumerism has enhanced the climate challenge.

Reforms recently Undertaken by India

• In physical and digital infrastructure like optical fibre in 6 lakh villages, 1.3 trillion dollars invested in connectivity-related infrastructure, the goal of generation of 80 billion dollars through asset monetization.

• Gatishakti National Master Plan to bring all the stakeholders on the single platform to infuse new dynamism to the seamless connectivity of goods, people and services.

• Today India has the world's largest, secure and successful digital payments platform.

➢ In December 2021, 4.4 billion transactions were done through Unified Payments Interface (UPI) in India.

• Technological solutions like Arogya-Setu App for tracking of Corona Infections and CoWin Portal for Vaccination.

India as an Investment Destination

• Recently, various reform measures have been taken by the Government, such as the removal of Retrospective taxation, reduction in compliance requirements and simplification of the Corporate Tax rate structure making it the best Investment Destination today.

➢ In the last year alone, India has reduced more than 25,000 compliances.

• Today, India has the third largest number of unicorns in the world. More than 10,000 start-ups have been registered in the last six months.

- India is promoting Ease of Doing Business, minimizing government intervention. Policy-making is focussed on needs for the next 25 years for a "clean and green" as well as "sustainable and reliable" growth.

Challenges before Multilateral Organizations

- When these institutions were formed, the situation was different. Today, the circumstances are different.

- Therefore, it is the responsibility of every democratic country to emphasize reforms in these institutions so that they can be enabled to meet the challenges of the present and future.

Collective Efforts for Challenges Ahead

- There is a need for collective and synchronized action by every country, every global agency.

- Supply chain disruptions, inflation and climate change are examples of these. Another example is crypto currency. The kind of technology that is associated with it, the decisions taken by a single country will be insufficient to deal with its challenges.

World Economic Forum

About:

- The World Economic Forum (WEF) is a Swiss non profit foundation established in 1971, based in Geneva, Switzerland.

- Recognized by the Swiss authorities as the international institution for public-private cooperation.

Mission

- Committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.

- Founder and Executive Chairman: Klaus Schwab.

- Some major reports published by WEF are: Energy Transition Index.
  - Global Competitiveness Report. Global IT Report

- WEF along with INSEAD, and Cornell University publishes this report.
  - Global Gender Gap Report.
  - Global Risk Report.
  - Global Travel and Tourism Report.

2.18 Social Housing Units Project in Mauritius

- Recently, the Prime Minister of India and Mauritius jointly inaugurated India-assisted social housing units project in Mauritius virtually as part of India's development support.

Key Points

About:

- In May 2016, India had extended a grant of USD 353 mn to Mauritius as Special Economic Package (SEP) to execute five priority projects identified by Mauritius, among others. These were: the Metro Express Project, Supreme Court Building, New ENT Hospital, Supply of Digital Tablets to Primary School Children, and the Social Housing Project.

- With the inauguration of the Social Housing Project, all the high profile projects under the SEP have been implemented.

Foundation Stone for Two Other Projects

Construction of a State-of-the-Art Civil Service College

- It is being financed through a grant support of USD 4.74 million, under an MoU signed in 2017 during the visit of Prime Minister of Mauritius to India.

- Once constructed, this will provide a fully equipped and functional facility for the civil servants of Mauritius to undertake various training and skill development programmes.

- It will further strengthen institutional linkages with India.

  ➢ The Prime Minister of India also acknowledged the importance of the Civil Service College project in nation building and offered to share learnings of Mission Karmayogi.

8 MW Solar PV Farm.

- It involves the installation of 25,000 PV cells to generate approximately 14 GWh of green energy annually, to electrify approximately 10,000 Mauritian households. It will help mitigate the climate challenges that Mauritius faces through avoidance of 13,000 tons of CO_2 emissions.
  - ➤ The idea for the One Sun One World One Grid (OSOWOG) initiative was put forth by the Indian Prime Minister at the First Assembly of the International Solar Alliance (ISA) in October 2018.

Exchange of Two Key Bilateral Pacts

- Agreement for the extension of USD 190 million Line of Credit from India to Mauritius for the Metro Express and other infrastructure projects.
- MoU on the Implementation of Small Development Projects.

India-Mauritius Relations

About:

- Connections between India and Mauritius date back to 1730 and diplomatic relations were established in 1948 before Mauritius became an independent state (1968).
- India has viewed Mauritius through the prism of the diaspora. This was, perhaps, natural since communities of Indian origin constitute a significant majority in the island.
  - ➤ Indian-origin people constitute nearly 70% of the population of Mauritius.
- It is a significant partner of India in celebrating Pravasi Bharatiya Diwas which is a forum for issues concerning the Indian Diaspora.

Significance for India

- Geo-strategic: India has begun to see the strategic significance of Mauritius to the renewed great power contestation in the Indian Ocean.
  - ➤ In 2015, India unveiled its strategic vision for the Indian Ocean called the SAGAR (Security And Growth for All in the Region).
  - ➤ In 2015, India and Mauritius signed an agreement that allows India to develop infrastructure in terms of establishing military bases on the Mauritian islands.

Geo-Economic

- As a "central geographic point" Mauritius holds importance for commerce and connectivity in the Indian Ocean.
- As a member of the African Union, Indian Ocean Rim Association and the Indian Ocean Commission, Mauritius is a stepping stone to multiple geographies.
- As a founding-member of the 'Small Island Developing States' (SIDS) it has been seen as a significant neighbour.

- India is Mauritius's largest trading partner and has been the largest exporter of goods and services to the Indian Ocean island nation since 2007.
- **Regional Hub:** As new investments pour into Mauritius from Africa, Mauritius can be the fulcrum for India's own African economic outreach.
  - ➢ India could also contribute to the evolution of Mauritius as a regional centre for technological innovation.
  - ➢ Mauritius could also become a valuable place for regional and international maritime scientific research.
- **Pivot of Island Policy:** Until now India has tended to deal with the so-called Vanilla islands of the south western Indian Ocean — Comoros, Madagascar, Mauritius, Mayotte, Reunion and Seychelles — on a bilateral basis.
  - ➢ If the Indian establishment thinks of them as a collective, it could make Mauritius the pivot of Delhi's island policy.
  - ➢ It can facilitate a number of Indian commercial activities in the south western Indian ocean — as a banking gateway and hub for tourism.
- Keeping Pace with China: In its "string of pearls" policy, China has built significant relations across the Indian Ocean, from Gwadar (Pakistan) to Hambantota (Sri Lanka) to Kyaukpyu (Myanmar).
  - ➢ Therefore, India should help Indian Ocean littoral states like Mauritius, Maldives, Sri Lanka and Seychelles as part of capacity and capability enhancement in strengthening their maritime domain awareness capabilities.

Important Developments

- In 2021, India approved signing of the Comprehensive Economic Cooperation and Partnership Agreement (CECPA) between India and Mauritius.
- India has signed a contract with Mauritius for the export of an Advanced Light Helicopter Mk III. The helicopter will be used by the Mauritius Police Force.

Way Forward

- While India and Mauritius share cultural contiguity dating back to colonial times and a special partnership in recent years, India cannot take its influence in Mauritius for granted and should continue to enhance its engagement with this important island country.
- As India takes an integrated view of its security cooperation in the south western Indian Ocean, Mauritius is the natural node for it. Therefore, it is important to take course-corrections in India's Neighbourhood First policy.

3. INDIAN ECONOMY

3.16 NERSDS-EAP scheme Sponsored By Asian Development Bank

- North Eastern Road Sector Development Scheme-Externally Aided Project (NERSDS-EAP) (earlier known as North East States Roads Investment Programme) is under implementation under the aegis of Ministry of Development of North Eastern Region.

- For all the ADB-aided projects, the Department of Economic Affairs (DEA) organizes periodic or issue-specific tripartite portfolios review meetings (TPRMs) two to three times in a calendar year to review the implementation and progress of the projects and addresses the issues, if any. These TPRMs are attended by the line Ministries, State Governments, project implementation agencies and ADB.

- Regarding NERSDS-EAP, a mechanism for comprehensive monitoring and evaluation of the project was included in the project design itself. It includes provision for concurrent, mid-term and post-project evaluation for performance as well as impact of the project. The Project Implementing Units of the State Governments also submit quarterly progress reports that are shared with the funding agency i.e. ADB.

- A Project Monitoring Unit has been set up in the Ministry of Development of North Eastern Region and the project is reviewed on regular basis. Inspections of the project-sites have been conducted by inspection teams with representatives of the Ministry, ADB and the State Government concerned.

3.17 Increase In PMJDY Accounts

- As a result of the many initiatives by the Government, the share of operative Pradhan Mantri Jan Dhan Yojana (PMJDY) accounts has increased from 60.38% in March'17 to 85.70% in November'21.

- Financial Literacy Centres (FLCs) and rural branches of banks have conducted outdoor financial literacy camps for customers in collaboration with ground level stakeholders at the District/ Panchayat /village level. They also conducted specific camps for target audience like farmers, small entrepreneurs, Self Help Groups, senior citizens etc. including women.

- The Centres for Financial Literacy project of the RBI also impart financial education among adults. In addition, banks in general organise camps, to create awareness about the banking habits including the benefits of keeping the account active.

3.18 Women In Agri-Startups

- The Ministry of Agriculture & Farmers Welfare has launched a component called "Innovation and Agri-Entrepreneurship Development" under Rashtriya Krishi Vikas Yojana (RKVY-RAFTAAR) in 2018-19 with an objective to promote innovation and agri-entrepreneurship by providing financial support and nurturing the incubation ecosystem.

- This Ministry has appointed five Knowledge Partners (KPs) as Centres of Excellence and twenty four RKVY-RAFTAAR Agribusiness Incubators (R-ABIs) from across the country for implementation of this programme. So far, 173 women startups/ entrepreneurs have been supported under the "Innovation and Agri-Entrepreneurship Development" programme.

- Besides, the Indian Council of Agriculture Research (ICAR) has been supporting Agri-based startups under the project called National Agriculture Innovation Fund (NAIF) initiated in year 2016-2017. So far, 50 Agri-Business Incubation Centers (ABICs) have been established and are operational in ICAR network under NAIF scheme. Potential women startups/ entrepreneurs can avail benefit from these programmes.

- Success stories of progressive women farmers and agricultural entrepreneurs are publicized through electronic, print and social media and by organizing workshops etc. A webinar on "Women in Agri-startups: Creating Value with Supply Chain Management" was organized during Mahila Kisan Diwas 2021 on 22.10.2021. An e-book depicting success stories of 75 progressive women farmers and agripreneurs was also released during the event.

- Anand Agricultural University, Anand, Gujarat has been appointed as R-ABI under "Innovation and Agri-Entrepreneurship Development" programme and ICAR-Directorate of Medicinal & Aromatic Plants Research, Anand and ICAR- Directorate of Groundnut Research (DGR), Junagarh have been set up as Agri-Business Incubation (ABI) centers under National Agriculture Innovation Fund of ICAR to ensure that women farmers of Gujarat get the maximum benefit of agriculture startups.

3.19 Agricultural Marketing Interface

- The Government is implementing Agricultural Marketing Infrastructure (AMI), a sub-scheme of Integrated Scheme for Agricultural Marketing (ISAM) under which assistance is provided for construction/ renovation of godowns/warehouses in the rural areas in the States to enhance the storage capacity for agriculture produce.

- Under the scheme, Government provides subsidy at the rate of 25% and 33.33% on capital cost of the project based on the category of eligible beneficiary. Assistance is available to Individuals, Farmers, Group of farmers/growers, Agripreneurs, Registered Farmer Produce Organizations (FPOs), Cooperatives, and state agencies etc.

- The scheme is demand driven. Further, Government has approved a new central sector scheme of financing facility viz., Agriculture Infrastructure Fund (AIF) of Rs. 1,00,000 Crore to provide a medium-long term loan facility for investment in viable projects for post-harvest market infrastructure including warehousing facility and community farming assets through interest subvention and financial support.

- AIF provides financial support in terms of Interest Subvention and Credit Guarantee on loans for post harvest management projects like Warehouses, Cold Chains, Silos etc. and building community farming asset projects. Under the scheme, loans are provided by banks and financial institutions to Primary Agricultural Credit Societies (PACS), Marketing Cooperative Societies, Farmer Producers Organizations (FPOs), Self Help Groups (SHGs), Farmers, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Startups and Central/State agency or Local Body sponsored Public Private Partnership Project.

- All loans under this financing facility have interest subvention of 3% per annum up to a limit of Rs.2 crore. This subvention is available for a maximum period of 7 years. Further, credit guarantee coverage is available for eligible borrowers from this financing facility under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme for a loan up to Rs. 2 crore.

3.20 Import And Export Of Dairy Products

- In 2021 India exported 48.91 million dollars' worth dairy products. In order to supplement the efforts of the States and boost dairy production in the country, several programmes have been undertaken by the Government which includes, inter-alia, the following:

➢ Rashtriya Gokul Mission: For development and conservation of indigenous bovine breeds, genetic upgradation of bovine population, enhancement of milk production and productivity of bovines thereby making milk production more remunerative to farmers;

➢ National Programme for Dairy Development (NPDD): For creating/strengthening of infrastructure for Production of quality milk, Procurement, Processing and Marketing of Milk & Milk Products;

➢ Dairy Processing and Infrastructure Development Fund (DIDF): To create/modernize the milk processing, chilling and value addition infrastructure;

➢ National Livestock Mission: Covering component of Feed and Fodder Development and Livestock Insurance including insurance of dairy animals;

➢ National Animal Disease Control Programme (NADCP): For control of Foot and Mouth Disease and Brucellosis among dairy animals; and

➢ Animal Disease Control Programme: For control of economically important livestock diseases and establishment of mobile veterinary clinics for delivery of veterinary services at farmer's doorstep.

3.21 Food Processing Sector

- The output data for registered manufacturing sector including food processing sector is brought out by the M/o Statistics and Programme Implementation through the Annual Survey of Industries.

- As per latest Annual Survey of Industries (ASI) 2018-19, the total output in food processing sector was Rs.12,76,995 crore, which contributed 12.83% of total output in the registered manufacturing sector in India. No projection of output growth is made in the ASI data.

- The Gross Value added (GVA) in the food processing sector was Rs.2.24 lakh crore in 2019-20 contributing 1.69% of the total GVA in the country. The GVA in food processing sector was 9.87% of GVA in Manufacturing and 11.38% of GVA in Agriculture, Forestry and Fishing sectors respectively.

- As per the ASI data (2018-19), 20.05 lakh persons were engaged in food processing sector. The sector contributed the largest share of 11.22% of total persons engaged in the registered manufacturing sector in the country.

- The Government has undertaken various policy measures and is implementing schemes to support and boost the food processing sector including for increasing the processing level. Major policy measures undertaken include:

➢ Inclusion of food & agro-based processing units and cold chain as agricultural activity under Priority Sector Lending (PSL) norms.

➢ A Special Food Processing Fund of Rs. 2000 crore was set up with NABARD to provide affordable credit for investment in setting up Mega Food Parks (MFP) as well as processing units in the MFPs.

➢ As a measure towards improving ease of doing food business, the Food Safety and Standards Authority of India (FSSAI) has shifted from product-by-product approval to an ingredient and additive based approval process.

➢ 100 per cent FDI under automatic route was already permitted for the food processing sector. 100% FDI under the government approval route has been allowed for retail trading, including e-commerce, in respect of food products manufactured/ produced in India.

- In order to ensure overall development of food processing industries (FPI) in the country including for dealing with challenges arising out of COVID-19, the Ministry Food Processing Industries (MoFPI) has undertaken a number of initiatives, which include:

➢ Launching of a Centrally Sponsored Scheme, namely, PM-Formalisation of Micro Food Processing Enterprises Scheme (PMFME) for providing financial, technical and business support for setting up/upgradation of 2 lakh micro food processing enterprises across the country during five years from 2020-21 to 2024-25 based on One District One Product (ODOP) approach with an outlay of Rs.10,000 crore.

➢ The expansion in the scope of "Operation Greens" scheme under Pradhan Mantri Kisan SAMPADA Yojana from Tomato, Onion and Potato (TOP) to all notified fruits & vegetables (TOTAL). Subsequently, in the Union Budget 2021, Operation Greens scheme has been extended from TOP to 22 perishables for value addition and export.

➢ Production Linked Incentive scheme (PLIS) for Food Processing Sector with an outlay of Rs 10,900 crore to support creation of global food manufacturing champions and support Indian brands of food products in international market.

➢ In order to facilitate food processing units, resume their operations, the Ministry of Food Processing Industries had established a dedicated Grievance Cell and a Task Force during initial phase of outbreak of COVID-19 pandemic to liaison with state authorities. A total of 585 industry related issues were resolved during the COVID lockdown period in 2020 by the Cell.

➢ The Ministry is implementing a Central Sector Scheme–Pradhan Mantri Kisan SAMPADA Yojana (PMKSY) for overall development of the food processing sector for increasing processing capacity, reducing wastage of agricultural produce, creating off-farm employment and ensuring better returns to farmers and enhancing export of the processed foods.

3.22 Reducing the cost Of Electric Vehicles

Since the cost of electric vehicle is relatively higher as compared to corresponding IC engine vehicle cost, the following steps have been taken by the Government to bring down the cost of electric/Hybrid vehicles on par with those internal combustion engines (ICE):

- The demand incentive for electric two wheelers has been increased to Rs. 15,000/KWh from Rs. 10,000/KWh with an increase in cap from 20% to 40% of the cost of vehicle from 11th June, 2021, thus enabling cost of Electric two wheelers at par with that of ICE two wheeler vehicles.

- The Government on 12th May, 2021 approved a Production Linked Incentive (PLI) scheme for manufacturing of Advanced Chemistry Cell (ACC) in the country in order to bring down prices of battery in the country. Drop in battery price will result in cost reduction of electric vehicles.

- Electric vehicles are covered under Production Linked Incentive (PLI) scheme for automobile and auto components, which was approved on 15.09.2021 with a budgetary outlay of Rs. 25,938 Cr. for a period of five years.

- GST on electric vehicles has been reduced from 12% to 5%; GST on chargers/ charging stations for electric vehicles has been reduced from 18% to 5%.

- Ministry of Road Transport & Highways (MoRTH) announced that battery-operated vehicles will be given green license plates and be exempted from permit requirements.

- MoRTH issued a notification advising states to waive road tax on EVs, which in turn will help reduce the initial cost of EVs.

3.23 Mahilakisan Sashaktikaran Pariyojana

- The Government has undertaken steps to create awareness regarding this programme and its benefits among the farming community to increase the participation of women in agriculture.

- In this regard, Ministry is continuously working to create awareness about the programme through, Community Resource Persons, IEC (Information, Education and Communication) strategies and campaigns of National Mission as well as the State Rural Livelihoods Missions.

- The benefits of taking up sustainable practices in Agriculture, Non- Timber Forest Produce (NTFP), and livestock are discussed in meetings of the Self Help Groups (SHGs), Village Organization and Cluster Level Federation meetings. The learning's from the practices adopted under Mahila Kisan Sashaktikaran Pariyojana (MKSP) are now being scaled up by the Rural Livelihoods Missions of States/Union Territories (UTs) under their Annual Action Plans (AAPs).

- Under Deendayal Antyodaya Yojana- National Rural Livelihood Mission (DAY- NRLM) till now, about 38 lakh women farmers have been trained under Mahila Kisan Sashaktikaran Pariyojana (MKSP). The learning of the interventions under MKSP has been expanded to various parts of the country under the Annual Action Plans of States/UTs. Accordingly, a total of around 1.44 crore Mahila Kisan (women farmers) have been covered under DAY-NRLM till date.

- The Deendayal Antyodaya Yojana- National Rural Livelihood Mission (DAY-NRLM) is already facilitating trainings to the women farmers in the sustainable agricultural practices.

3.24 Private Investment In Industry

- Investment Promotion activities are carried out by Government to attract more investments in the country. As a part of steps being taken to improve private interest and investment, 'Make in India' initiative was launched on September 25, 2014, to facilitate investment, foster innovation, building best in class infrastructure, and making India a hub for manufacturing, design, and innovation. Investment outreach is being done through Ministries, State Governments and Indian Missions abroad for enhancing international cooperation for promoting Domestic and Foreign Direct Investment (FDI) in the country.

- In addition to ongoing schemes of various Departments and Ministries, Government has taken various other steps to boost domestic and foreign investments in India. These include reduction in Corporate Tax Rates, easing liquidity problems of NBFCs and Banks, improving Ease of Doing Business, FDI Policy reforms, Reduction in Compliance Burden, policy measures to boost domestic manufacturing through Public Procurement Orders, Phased Manufacturing Programme (PMP), and Schemes for Production Linked Incentives (PLI) of various Ministries.

- To facilitate investments, measures such as India Industrial Land Bank (IILB), Industrial Park Rating System (IPRS), soft launch of the National Single Window System (NSWS), National Infrastructure Pipeline (NIP), National Monetisation Pipeline (NMP), etc. have also been put in place.

- India registered its highest ever annual FDI inflow of US$ 81.97 billion (provisional figures) in the financial year 2020-21 despite the COVID related disruptions. In the last seven financial years

(2014-21), India has received FDI inflow worth US$ 440.27 billion which is nearly 58 percent of the FDI reported in the last 21 years (US$ 763.83 billion). These trends in India's FDI are an endorsement of the country's status as a preferred investment destination amongst global investors.

3.25 **Fintech Sector**

- With Fintech adoption rate at 87% against the global average of 64%, India has emerged as one of the largest digital markets in the world. Fintech Sector has huge potential in India, supported by an enabling policy and digital infrastructure framework.

- As per industry estimate, India has over 676 million smartphone users, over 1.2 billion telecom subscribers (wireless + wired) and 825 million internet subscribers of which approximately 39% belong to the rural areas (as on March 2021).

- Further, total number of transactions related to digital payments, a key enabler for expansion of digital markets, has increased from 2,071 crore in FY 2017-18 to 5,554 crore in FY 2020-21. As on date, more than 5179 crore transactions have been reported in the current financial year.

- Furthermore, India now hosts the 3rd largest ecosystem for startups globally; 59,593 startups have been recognized by DPIIT across 57 unique industries, of which 1,860 startups belong to the Fintech sector. As of December 2021, India has over 17 Fintech companies, which have gained 'Unicorn Status' with a valuation of over USD 1 billion.

Key initiatives undertaken by the Government for the Fintech ecosystem in India are listed below:

➢ Jan DhanYojana has been targeted at increasing financial inclusion in India by helping in new bank account enrollment of beneficiaries for direct benefits transfer and accessibility to a host of financial services applications. This has enabled Fintech startups to build technology products to penetrate the large consumer base in India.

➢ India Stack is a societal initiative aimed at building public digital infrastructure to promote public and private digital initiatives including accelerated adoption of technology in finance.

➢ Aadhar, the unique biometric identification system, has allowed Aadhar Enabled Payment System and Aadhar Payment Bridge System:

  ▪ Aadhar Enabled Payment System allows individuals to conduct financial transactions on a Micro-ATM by furnishing their Aadhar number and verifying it with the help of their fingerprint/iris scan.

  ▪ Aadhar Payment Bridge System allows ease in bulk and recurring Government benefits and subsidy payments, facilitating operations from Aadhar-linked bank accounts, using the biometric authentication.

➢ Development and roll-out of authentication solutions including digital KYC, video-based customer identification process, and digital signature on documents has created various safeguards and a

hassle-free system for Fintech startups and customers to leverage the technology-enabled solutions in the sector.

- A central repository, Central KYC, has been developed for reducing the hassle of undergoing multiple KYCs for different financial institutions. This allows the KYC process of consumers to be conducted only once unless there are any changes in consumer details.
- KYC and customer on boarding costs have been reduced significantly enabling expansion of financial services to rural India and opening their accounts.

- ➢ Unified Payments Interface (UPI) has been built as a scalable payments platform supporting digital payments in India.

- ➢ License for Payments Banks has further helped in enhancing the financial inclusion drive in the country by allowing the setting-up of payments banks and expanding the access to payments/remittance services. In a bid to promote digital payments banks in the country, RBI has announced an increase to the maximum end of day balance for payment banks to Rs. 2 lakh.

- ➢ National Automated Clearing House System has been successfully used for making bulk transactions.

- ➢ Bharat Bill Payment System has helped in enhancing consumer convenience to pay bills across utilities and other segments and has been expanded to include all categories of billers who raise recurring bills (except prepaid recharges) as eligible participants, voluntarily.

- ➢ RBI has also developed a Payments Infrastructure Development Fund (PIDF) scheme to subsidise deployment of payment acceptance infrastructure in tier-3 to tier-6 centres.

- ➢ The RBI has created a regulatory framework around Peer-to-Peer (P2P) lending by recognising P2P lenders as Non-Banking Financial Companies (NBFCs), thus providing alternative credit access to the unbanked.

- ➢ IRDAI has undertaken various initiatives towards boosting the insurance penetration, such as permitting insurers to conduct video-based KYC, launching standardized insurance products and allowing insurers to offer rewards for low-risk behaviour.

- ➢ Government institutions such as the Health ministry and the NITI Aayog are also supporting the transformation in the insurance industry through the National Digital Health Mission (NDHM), the Digital Information Security in Healthcare Act (DISHA) and the National Health Stack.

- ➢ A world-class Fintech hub has been developed at the International Financial Services Centre (IFSC), GIFT City in Gandhinagar, Gujarat to further strengthen the vision of making India a global Fintech hub.

3.26 Generation Of Employment By Startups

- Government of India as part of Startup India initiative has implemented Fund of Funds for Startups (FFS) Scheme and Startup India Seed Fund Scheme (SISFS) across all States/UTs to promote private investment in the Startups through Alternative Investment Funds (AIFs) and incubators.

- Under FFS, a corpus of Rs. 10,000 crore has been sanctioned which is spread over 14th and 15th Finance Commission cycles. Small Industries Development Bank of India (SIDBI) is the nodal bank under this Scheme. The FFS Scheme does not directly provide financial assistance to startups, instead supports SEBI- registered Alternative Investment Funds (AIFs), who in turn invest money in growing Indian startups through equity and equity-linked instruments.

- Under the Startup India Seed Fund Scheme (SISFS), Rs. 945 crore has been sanctioned for period of 4 years starting from 2021-22. The funds are released to Startups through approved Incubators.

- Further, 49 key regulatory changes to enhance ease of doing business, raising capital and reducing compliance burden have been undertaken. This includes insurers, EPFO, non-government provident funds, superannuation, and gratuity funds to invest in AIFs, thereby enabling billions of dollars' worth of domestic capital being made available for the Indian startup ecosystem.

- Furthermore, requirement of prior turnover and experience has been relaxed to encourage startups to participate for tenders. Startups have been exempted from requirement of earnest money deposit. 'GeM Startup Runway' has been launched with dedicated corner for startups to sell products and services to Government. As on 3rd October, 2021, 11,386 startups had been on boarded on GeM, with 93,908 orders from public entities.

3.27 Making India A Production Hub

- Various initiatives/schemes have been launched by Government for promoting growth and attracting investment in India. The Make in India programme was launched on 25th September, 2014 with aim of facilitating enhanced investment, foster innovation, build best in class infrastructure, and make India a hub for manufacturing, design, and innovation. Continuous efforts are made under Investment Facilitation and Outreach for implementation of Make in India action plans to identify potential investors, support Indian Missions abroad and State Governments for organizing events, summits, road-shows and other promotional activities to attract investments in the country.

- Measures have been taken to improve the country's investment climate, as a result of which India jumped to 63rd place in World Bank's Ease of Doing Business [EODB] ranking as per World Bank's Doing Business Report (DBR) 2020 from a rank of 142 in 2014. Department for Promotion of Industry and Internal Trade (DPIIT), in consultation with the State Governments, has also started a comprehensive reform exercise in States and UTs in December 2014. Under Business Reforms Action Plan (BRAP), all States/UTs in the country are ranked on the basis of reforms implemented

by them on designated parameters. This exercise has helped in improving business environment across States.

- An Empowered Group of Secretaries has been constituted to fast track investments in the country. Similarly Project Development Cells (PDCs) have been set up across Central Government Ministries / Departments to handhold investors and spur sectoral and economic growth. Further, a GIS-enabled India Industrial Land Bank has been launched to help investors identify their preferred location for investment. National Single Widow System (NSWS) has also been soft launched in September, 2021 to facilitate clearances for investors.

- Keeping in view India's vision of becoming 'Atmanirbhar' and to enhance India's manufacturing capabilities and exports, an outlay of INR 1.97 lakh crore (over US$ 26 billion) has been announced in Union Budget 2021-22 for Production Linked Incentives (PLI) schemes for 14 key sectors of manufacturing starting from fiscal year (FY) 2021-22. With the announcement of PLI Schemes, significant creation of production, employment, and economic growth is expected over the next 5 years and more.

- Measures taken by the Government including on FDI Policy reforms have resulted in increased FDI inflows in the country year after year. India registered its highest ever annual FDI inflow of US$ 81.97 billion (provisional figures) in the financial year 2020-21 despite the COVID related disruptions. These trends in India's FDI are an endorsement of its status as a preferred investment destination amongst global investors. In the last seven financial years (2014-21), India has received FDI inflow worth US$ 440.27 billion which is nearly 58 percent of the FDI reported in the last 21 years (US$ 763.83 billion). This indicates increasing inclination of global companies to set up their business in India.

- Government has taken various other steps in addition to ongoing schemes to boost domestic and foreign investments in India. These include measures to reduce compliance burden for industry, National Infrastructure Pipeline, Reduction in Corporate Tax, Easing liquidity problems of NBFCs and Banks, Policy measures to boost domestic manufacturing through Public Procurement Orders, Phased Manufacturing Programme (PMP), and Schemes for Production Linked Incentives (PLI) of various Ministries, India Industrial Land Bank, Industrial Park Rating System etc. With the announcement of PLI Schemes, significant creation of production, employment, and economic growth is expected over the next 5 years and more.

- Besides the above, activities are also undertaken through schemes/ programmes, by several Central Government Ministries / Departments and various State Governments from time to time. The details of these measures are not centrally maintained by Department for Promotion of Industry and Internal Trade.

3.28 Share Of Exports In GDP

Government has been facilitating, monitoring, assisting and channelizing efforts to increase the exports and thereby its share in GDP through a target-driven approach by engaging all stakeholders, across states and districts. Despite the pandemic, the share of India's total exports (Good & Services) to GDP was 18.7% in 2020-21, which is already above 15 percent. Exports have performed remarkably well in the current financial year with the share of exports to GDP at 21.7 percent in the first half (April to September) of 2021-22.

The following are some of the steps taken by Department of Commerce to increase exports and thereby its share in GDP:

- 'Districts as Export Hubs' (DEH) Initiative under which products and services with export potential have been identified in all districts of the country. An institutional mechanism has been set up in each District in the form of District Export Promotion Committees (DEPCs). The primary function of the DEPC is to prepare and act on District Specific Export Action Plans in collaboration with all the relevant stakeholders from the Centre, State and District levels.

- A Central Sector Scheme 'Transport and Marketing Assistance (TMA) for Specified Agriculture Products' for providing assistance for the international component of freight, to mitigate the freight disadvantage for the export of agriculture products, and marketing of agricultural products, is under implementation.

- Market Access Initiative (MAI) Scheme is an Export Promotion Scheme envisaged to act as a catalyst to promote India's exports on a sustained basis. The scheme is formulated on focus product-focus country approach to evolve specific market and specific product through market studies/survey. Assistance would be provided to Export Promotion Organizations/Trade Promotion Organizations/National Level Institutions/ Research Institutions/Universities/Laboratories, Exporters etc., for enhancement of exports through accessing new markets or through increasing the share in the existing markets.

- In addition, assistance to the exporters of agricultural products is also available under the Export Promotion Schemes of Agricultural & Processed Food Products Export Development Authority (APEDA), Marine Products Export Development Authority (MPEDA), Tobacco Board, Tea Board, Coffee Board, Rubber Board and Spices Board.

- Trade Infrastructure for Export Scheme (TIES) is operational from FY 2017-18 with the objective of assisting Central and State Government agencies for creation of appropriate infrastructure for growth of exports.

- The Government has introduced the Remission of Duties and Taxes on Exported Products (RoDTEP). This scheme seeks remission of Central, State and Local duties/taxes/levies at different stages at the Central, State and local level, which are incurred in the process of manufacture and

distribution of exported products, but are currently not being refunded under any other duty remission scheme.

- Common Digital Platform for Certificate of Origin to facilitate trade and increase FTA utilization by exporters.

- EPCs, Commodity Boards and India's mission abroad are actively promoting India's trade, tourism, technology and investment goals.

3.29 Sustainable Mining enabled by latest Technology

- Mineral Conservation and Development Rules (MCDR), 2017 provide rules regarding conservation of minerals, systematic and scientific mining, development of the mineral in the country and for the protection of environment. The Ministry of Mines has notified the Mineral Conservation and Development (Amendment) Rules, 2021 on 03.11.2021. The amended Rules prescribe that all plans and sections shall be prepared by combination of Differential Global Positioning System (DGPS) or Total Station or by the use of drone survey or as may be specified in this regard by Indian Bureau of Mines (IBM) in relation to certain or all category of leases.

- Lessees having annual excavation plan of 1 million tonne or more in a particular year or leased area of 50 hectare or more shall carry out a drone survey of the leased area and up to 100 metres outside the lease boundary in the month of April or May every year and submit the processed output images obtained from such survey or any other format as may be specified by the IBM in this regard to the Controller General on or before 1st day of July every year.

- Other lessees shall submit soft copy of high resolution Georeferenced Ortho-rectified Multispectral satellite images of the leased area and upto 100 metres outside the lease boundary taken in the month of April to June of every year, to the Controller General on or before 1st day of July of the that year in the standard format. These steps will not only improve mine planning practices, security and safety in the mines but also ensure better supervision of mining operations.

3.30 Hydrogen Fuel For Public Transport

- To promote vehicles operating on hydrogen fuel, this Ministry has issued a notification vide G.S.R. 889(E), dated 16.09.2016, for use of Hydrogen as an automotive fuel in the country. The specifications for Hydrogen for Internal Combustion Engine have been specified in Annexure IV-W of the said notification. 18% blend of Hydrogen with CNG (HCNG) has been notified by this Ministry vide GSR 585(E) dated 25th September 2020.

- Various hydrogen powered vehicles have been developed and demonstrated under projects supported by Government of India. These include 6 Fuel Cell buses (by Tata Motors Ltd.), 50 hydrogen enriched CNG (H-CNG) buses in Delhi (by Indian Oil Corporation Ltd. in collaboration with Govt. of NCT of Delhi), 2 hydrogen fuelled Internal Combustion Engine buses (by IIT Delhi in collaboration with Mahindra & Mahindra), fifteen hydrogen fuelled 3wheelers (by IIT Delhi in

collaboration with Mahindra & Mahindra), 2 Hydrogen-Diesel dual fuel cars (by Mahindra & Mahindra) and one fuel cell car (by CSIR-National Chemical Laboratory, CSIR-Central Electrochemical Laboratory and CSIR-National Physical Laboratory). However, commercialization of hydrogen fuelled bus has not been undertaken in India so far.

4. ENVIRONMENT

4.24 Viral Desai bagged "Global Environment And Climate Action Citizen Award 2021"

- Viral Sudhirbhai Desai, an industrialist from Surat, who is popularly known as the Greenman or green man of Gujarat has been honoured with the Global Environment and Climate Action Citizen Award 2021.

Global Environmental Citizen Award

- It is an environmental award, established by "Harvard Medical School Centre for Health and Global Environment". It is bestowed annually to an individual who is working to restore and protect global environment.

4.25 PM Modi laid the foundation stone of 4 hydropower projects in Himachal Pradesh

- Prime Minister Narendra Modi has inaugurated and laid the foundation of the hydropower projects worth Rs 11000 crore in Mandi, Himachal Pradesh.
- He inaugurated the Sawra-Kuddu Hydro Power Project, a 111 MW Project which has been built at a cost of around Rs 2,080 crore. He also laid the foundation stone of the Renukaji Dam project which has been kept pending for around 3 decades.
- The 40 MW project will be built at a cost of around Rs 7,000 crore. Other Projects are: Luhri Stage 1 Hydro Power Project and the Dhaulasidh Hydro Power Project, the first hydropower project of the Hamirpur district.

4.26 Largest ever Rhino Transfer

White Rhinoceros

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- Recently, 30 white rhinos were transferred from South Africa to Rwanda, onboard a Boeing 747 chartered plane. They were transferred in light of increasing threat of illegal poaching. It was the largest single transfer of white rhinos ever.

The White Rhinoceros

- White Rhinoceros are also known as square-lipped rhinoceros while their scientific name is Ceratotherium simum. They are the largest extant species of rhinoceros. They have a wide mouth, which they use for grazing. They are considered as the most social among all rhino species.

- International Union for Conservation of Nature (IUCN) status

- As per latest IUCN assessment of 2020, the Northern White Rhinoceros are considered as "Critically Endangered" or Possibly Extinct in the Wild.

4.27 Tiger Deaths in India in 2021

- According to National Tiger Conservation Authority (NTCA), in 2021 India reported the death of around 126 tigers

Status of Tiger

- The tiger is globally listed as "endangered" on the International Union for the Conservation of Nature (IUCN) Red List. As of 2015, global wild tiger population was estimated between 3,062 and 3,948 mature individuals. Most of the population is living in small isolated pockets. Presently, India hosts the largest population of tiger.

Reasons for declining population

- Major reasons for declining population include- habitat destruction, poaching and habitat fragmentation. They are also victims of human–wildlife conflict.

The Royal Bengal Tiger

- The Bengal Tiger is a tiger from specific population of Panthera tigris subspecies. They are native to the Indian subcontinent. Tiger population in India was estimated at 2,603–3,346 individuals, as of 2018. Around 300–500 tigers are there in Bangladesh, 220–274 in Nepal while 103 tigers in Bhutan.

National Tiger Conservation Authority (NTCA)

- NTCA was established in December 2005 on the recommendation of the Tiger Task Force. It was constituted by the Prime Minister of India to manage the Project Tiger and many Tiger Reserves in India.

Project Tiger

- Project Tiger, a tiger conservation programme, was launched in April 1973. It was launched with the aim of ensuring a viable population of the Bengal tiger in its natural habitats, preserving areas of biological importance and protecting tiger from extinction.

4.28 Why is 'Rare Pink Handfish' seen in the news?

Pink Handfish

- The Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australia, recently spotted a rare pink handfish near Tasmanian coast, after 22 years. The fish was last spotted in 1999.
- The Australian marine researchers used an underwater camera inside the seabed in Tasman Fracture Marine Park, in February 2021. While going through the footage later, they spotted the pink handfish.
- The Taman Fracture Marine Park is known for its deep fracture inside the earth's crust, allowing scientists to explore marine life up to the depths of 4,000 meters.
- Earlier, it was assumed that, pink handfish lives in shallow waters. However, this time it was found at the depth of 150 meters.

About Handfish

- Handfish are any anglerfish, belonging to the family Brachionichthyidae. This family is a group of five genera and 14 extant species.
- These benthic marine fish are known for the way they propel themselves by walking on sea floor rather than swimming.
- Presently, Handfish are found in the coastal waters of southern and eastern Australia and Tasmania.
- They are scientifically called as Latin brachium.

Why the species are named handfish?

- The species has been named 'handfish' because of their little hand like structure, which they use to walk on the sea bed.

Population of Handfishes

- Hand fishes have small population sizes and their distributions are restricted. Thus, they are highly vulnerable to disturbance. Some species are classified as critically endangered.

Characteristics of Handfish

- Handfishes grow up to 15 cm long. They have skin covered with denticles, which give then an alternate name 'warty anglers'. They are slow-moving fish.

4.29 'Climate of India during 2021' report

- Indian Meteorological Department (IMD) published its "Climate of India during 2021" report on January 21, 2022.

Key findings of the report

- As per report, year 2021 was the fifth warmest year in India since country-wide records started in India in 1901.
- India reported a loss of 1,750 lives because of extreme weather events in 2021.
- Maharashtra was the most adversely affected state, with 350 deaths.
- Among extreme weather events, lightning & thunderstorms were responsible for claiming 787 lives followed by floods, heavy rains, and landslides, causing deaths of 759 people.
- Cyclones were responsible for 172 deaths in different states in 2021.

Mean temperature

- In India, the annual mean land surface air temperature during 2021 was 0.44 degree C above the LPA. Winter (January to February) with mean temperature anomalies of +0.78 degree C and post-monsoon (October to December) with mean temperature anomalies of +0.42 degree C mainly contributed to this warming. The all-India mean temperatures during other seasons like pre-monsoon (March to May) and monsoon (June to September) were also reported "above normal" with mean temperature anomalies of +0.35 degree C and +0.34 degree C, respectively.

Mean Temperature during 1901-2021

- The annual mean temperature in India during 1901-2021 witnessed an increasing trend of 0.63 degree C per 100 years. India's mean surface temperature seems to be in sync with increase in the global mean surface temperature.

4.30 Environment Ministry Star Rating System

- The Ministry of Environment, Forest and Climate Change recently launched "Star Rating System". The system provides environmental clearance in short duration.

About the Star Rating System

- The Environment Ministry is to rank and incentivize the states with this new system. The ministry will find out states that provide environmental clearances efficiently in short duration of time. It will then incentivize such states. For this, the star rating system provides marks to the states on a scale of seven. The states receive two marks for clearing a project in less than 80 days. One mark for clearing in 105 days. Zero for clearing in more than this duration. If the state has less than 10% of projects for scrutiny, then one mark is provided and so on.

Features

- It introduces conditions for State Environment Impact Assessment Authorities (SEIAA). These conditions are based on the following:

  ➢ Proposals waiting for more than thirty days

  ➢ Terms of Reference proposals waiting for more than thirty days

  ➢ Percentage of disposal of fresh terms of reference

  ➢ Environmental Clearances waiting for more than 105 days

  ➢ Complaints reassessed

  ➢ The system will provide star rating to the SEIAA. The rating is provided based on the performance of the authority in the past six months. The ratings are updated in the month end.

  ➢ The average time taken to grant the clearance has been decreased to 75 days. Earlier it was 105 days. The 105 days is in accordance to the Environmental Impact Assessment Notification, 2006.

Division of Powers: between centre and state

- The system says that the infrastructure projects should be approved first by the SEIAA. For this the SEIAA shall constitute committees with environmental experts and state officers. The Category A projects, that is, those that involve forest land should be cleared by the committee constituted by the centre.

- The projects that will be cleared by SEIAA will mostly be Category B projects. However, they form the major portion. This includes small mining, building and construction, small industry project. It includes those projects that are 'less polluting'.

Why the new system?

- To increase ease of doing business in India. In 2021, the cabinet secretaries held a meeting on improving the ease of doing business in India. They then decided to ease the environmental clearance processes through star rating system. The clearances are to be provided based on timelines and efficiency.

Concerns raised

- The proposed system is in violation of Envrinoment (Protection) Act. The aim and the focus is on

clearing the project in short duration of time, while the environmental clearances should focus on the health of the environment, how will the project affect the environment and what can be done to reduce the environmental losses induced by the project.

4.31 Antarctica Icefish Breeding Colony

- The deep sea scientists have found an ice fish breeding colony in the Weddell sea of Antarctica. The scientific name of the ice fish is Neopagrtopsis ionah.

About the discovery

- The species was discovered in February 2021. However, their breeding nests were discovered recently.

About the Ice Fish

- The blood of the ice fish is transparent in colour. They do not have red blood cells. They do not have haemoglobin to transport oxygen. It is an evolutionary adaptation. It is not a happy evolution. They absorb oxygen through their skin. They have huge hearts. They were found at a depth of 90 metres to 200 metres.

About the ice fish nests

- The nests were a foot wide. Each nest had more than thousand eggs. The males guard the nests from the predators such as starfish until the eggs hatch. The males also clean the nests now and then. They use their elongated jaw to clean the nests. Each nest is guarded by a single male ice fish.

- Currently there are 60 million active nests. They are spread over 92 sqaure miles in the Antarctic sea.

- This is the largest fish breeding colony discovered in the world.

- These nests held a fish biomass of 60,000 tonnes.

- The size of the nests is more than three – quarters a metre.

- Unique Warm waters

- The ice fish nests were found in a warm patch of water. This was unique and strange to the scientists. The temperature of the water here was 35 degrees Fahrenheit.

Abandoned nests

- Around 31 miles from the current breeding spot, the scientists discovered another patch of nests. Those nests were abandoned. They are now occupied by corals and sponges.

Weddell sea

- It is located in the southern ocean. More than 10,000 square kilometres of ice in the Weddell sea disappeared in 2002. The sea has the clearest water.

4.32 Climate Hazards and Vulnerability Atlas of India

- The scientists of CRS have created a climate hazards and vulnerability atlas of India. CRS is Climate Research and Services and it operates under India Meteorological Department (IMD).

About the map

- The scientists created the map based on 14 extreme weather events. They also considered the risks and threats imposed by these 14 weather events on the local population and their economy. Here 'local' is pertained to district and not state or village.

Launched on Foundation Day of IMD

- Every year, the Indian Meteorological Department celebrates its foundation day on January 14. The map was launched during this year's celebrations. It was launched by the Union Minister of Earth Sciences Dr Jitendra Singh. The IMD was established in 1875. It operates under Ministry of Earth Science. It is responsible for meteorological observations, seismology and weather events. It is one of the six regional meterological centres of the World Meteorological Organization.

Features of the atlas

- It provides information about heat waves, cold waves, extreme rainfall, thunderstorm, lightning, and snowfall, cyclones, winds, and fog and hail storm.
- It provides vulnerability values and hazards values. These values were calculated using the historical climate data of the meteorological department.
- It provides month – wise hazard levels of each district.
- It has 640 maps. They all have categories ranging from moderate, low, high and very high.
- The map provides Normalised Vulnerability Index for each district.
- Lightning causes highest casualties in India. It is followed by floods, cyclones and fog. They also cause high economic and livelihood losses.

Climate Research and Services

- The headquarters of CRS is located in Pune. It provides weather forecast, AWS data, gridded data, radiation data, agro met data, and meteorological data.

Significance

- The atlas helps to take precautionary measures. It uses disaster data, hourly autographic data,

cyclone track data, daily rainfall data, population density data, storm surge data, etc.

4.33 Volcanic Eruption in Tonga

- An underwater volcano erupted in Tonga (a country in the Pacific Ocean) recently. It is called the "Hunga Tonga Hunga Haapai" volcano. The eruption was huge and loud. Though the volcano was located under water and 2,383 km away, it was heard in Tonga. Also, the eruption created tsunami waves.

About the volcano

- The volcano had been erupting for some days now. This was identified through the smell of ammonia and sulphur in some areas. The volcano is located in a seismically active area.

Meteo-tsunami waves

- The volcanic eruption created tsunami waves in the nearby beaches and also in the regions around the Pacific. The tsunami waves caused by this type of volcano are called meteo tsunami waves. It is caused due to collapse of a part of the volcano. The meteo – tsunami waves are caused by instant changes in pressure that leads to displacement of large amount of water.

Hunga tonga

- It is a volcanic island. It is located in Tonga. Tonga is a Polynesian country. It is an archipelago. It consists of 169 islands. It is surrounded by New Caledonia and Vanuatu in the west, Fiji, Futuna and Wallis in the north west, Niue in the east and Kermadec (New Zealand) in the south west.

Hunga Tonga Hunga Haapai

- Hunga Tonga and Hunga Haapai were two separate islands. A volcanic eruption merged the two islands. The recent eruption has occurred in this underwater volcano that merges the two islands. The volcano in the island is a part of Kermadec Islands Volcanic arc.

Kermadec Islands Volcanic arc

- It is a sub – tropical island arc. It is located in the South Pacific Ocean. It is located to the south west of Tonga and north east of New Zealand. It is located in subduction zone. Subduction zones occur when one heavier and larger tectonic plate dives beneath the other less heavier tectonic plate. Volcanic arc is chain of volcanoes. These volcanoes are formed above the subducting plate.

- The Hunga Tonga Hunga Haapai was formed as the Pacific plate subducts the Indo – Australian plate

4.34 India's State of Forest Report 2021

- The Ministry of Environment, Forest and Climate Change recently released the State of Forest Report 2021. It is called the ISFR, 2021. The report says that there has been a continuous growth of forest cover in India. The current forest cover of India is 7,13,789 square kilometres.

Increase in Forest Cover

- In the last two years, the forest and tree cover has increased by 1,540 square kilometres.

- Around 21.71% of the land area is under forest cover. In 2019, it was 21.67%.

- Tree cover in the country has increased by 721 square kilometres. Tree cover is the patches of trees in the land size less than one hectare. They occur outside forest area.

State – wise forest cover

- Telangana has shown the highest increase in forest cover of all the states. Here the forest cover has increased by 3.07%. Followed by Telangana, in Andhra Pradesh, the forest cover has increased by 2.22%. At the third place is the state of Odisha. In Odisha, the forest cover has increased by 1.04%. The increase in these states is due to agro forestry and plantation.

- The states with forest loss were Manipur, Arunachal Pradesh, Nagaland, Mizoram, Meghalaya.

- The state with highest forest cover is Madhya Pradesh. It was followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra. This ranking is area – wise, that is, states holding largest amount of forest land.

- The states with highest percentage of land cover of forest were Mizoram, Arunachal Pradesh, Meghalaya, Manipur and Nagaland. This is percentage of forest land in the total land area of the state.

Mountainous states

- Jammu and Kashmir lost very dense forest. It now has 4,155 square kilometres of very dense forest. In 2019, it had 4,270 square kilometres of very dense forest.

- The state of Himachal Pradesh forest area has increased by 9 square kilometres. However, the moderately dense forest in the state has decreased.

- The Himalayan states such as Himachal Pradesh, Jammu and Kashmir, Ladakh and Uttarakhand are to record maximum increase in temperature mainly due to forest cover loss.

- The north eastern states are to face extreme rainfall due to forest cover loss.

Mangroves

- They have increased by 17 square kilometres. The total mangrove cover in India is 4,992 square kilometres.

Forest Fires

- In India, 35.46% of forest cover is prone to forest fires. Of this, 11.51% are highly prone, 7.85% are very highly prone, 2.81% are extremely prone.

Climate Change

- 45% to 64% of forests in India are to experience climate change by 2030. The highly vulnerable climate hot spots are all forests except those in Tripura, Meghalaya, Assam and Nagaland. Of all the forest areas, Ladakh will be affected the most.

Carbon Stock

- The forests of India currently hold 7,204 million tonnes of carbon. This is referred to as forest carbon stock. FOREST CARBON STOCK OF INDIA = 7,2014 million tonnes.
- The carbon stock is the atmospheric carbon that is currently sequestrated (held or stored or captured). If the forests are destroyed, they will be released to the atmosphere.

Bamboo Forest

- The bamboo forest cover is 53,336 million stems or culms. It was 13,882 million stems in 2019.

Decline in Natural Forest

- The moderately dense forests have decreased by 1,582 square kilometre. These are the natural forests. However, the scrub area has increased by 5,320 square kilometre. This means the forest areas in these regions are replaced by scrubs. This is an indicator to decline in forest area.
- The very dense forest has increased by 501 square kilometres.

Decline in North East Forest Cover

- The overall forest cover in this region has declined by 1,020 square kilometres. This is mainly due to shifting agriculture, felling of trees, developmental activities.

New Features of ISFR, 2021

- For the first time, the ministry has included tiger corridors, tiger reserves and Gir forest.

Tiger Reserves and Corridors

- In the tiger corridors, the forest cover has increased by 37.15 square kilometre. This increase happened between 2011 and 2021. It is 0.32%.
- In tiger reserves, the forest cover has decreased by 22.6 square kilometres. This is 0.04%.
- Between 2011 and 2021, forest cover has decreased in 32 tiger reserves and increased in 20 tiger reserves.
- The tiger reserves showing increase in forest cover are Anamalai Tiger reserve in Tamil Nadu, Indravati Tiger Reserve in Chhattisgarh, Buxa Tiger Reserve in West Bengal.
- The tiger reserves showing the highest loss in forest cover are Sunderbans tiger reserve in West Begal, Kawal tiger reserve in Telangana and Bhadra Tiger Reserve in Karnataka.

Definitions

- Forest Area: It is the legal status of the land
- Forest Cover: Presence of trees in the land
- Very Dense Forest: Canopy Density>70%
- Moderately Dense Forest: Canopy density – 40% to 70%
- Open Forest: Canopy density – 10% to 40%
- Scrubs: Canopy density – less than 10%

- Canopy: It is the uppermost branch of the trees. They form continuous layer of foliage.

What does the forest survey cover?

- It covers "recorded forest area" and also other forest cover irrespective of ownership and land use. Recorded Forest area covers forests that are included in government records only. The forest survey includes other forest covers apart from the recorded forest area. This may be private forest land, tea estates, teak plantations, etc.

4.35 Gulabo: India's oldest sloth bear

- On January 10, 2022, India's oldest sloth bear, named Gulabo, died at the Van Vihar National Park and Zoo in Bhopal. The bear was aged 40.

Which institute take care of sloth bears?

- At Van Vihar, Wild Life (SOS) Institute takes care of the health and upkeep of sloth bears.

The sloth bears

- The sloth bears are scientifically known as Melursus ursinus. They are a myrmecophagous bear species, which are native to the Indian subcontinent. They feed on fruits, ants and termites. They have been listed in vulnerable category on the IUCN Red List, because of degradation and habitat loss.

Why are they called labiated bear?

- The bear is also called as "labiated bear" because of their long lower lip and palate, which they use for sucking up insects.

What are other features of the bear?

- They have a long, shaggy fur and a mane around the face. They also have long and sickle-shaped claws. The bears are lankier than brown and Asian black bears. They share the features of insectivorous mammals.

Breeding Season

- Sloth bears breed during spring and early summer while give birth near the start of the winter.

Habitat of the bears

- The global range of sloth bear includes India, temperate climatic zones of Bhutan & Sri Lanka and Terai region of Nepal. They occur in a wide range of habitats ranging from moist and dry tropical forests, scrublands, savannahs, and grasslands below 1,500 m on the Indian subcontinent. They are also found below 300 m in dry forests of Sri Lanka. However, they are regionally extinct in Bangladesh.

4.36 Expansion of Orang National Park

- The Assam Government has recently decided to increase the size of Orang National Park. The park is to be expanded thrice.

About the Expansion plan

- The State is to add 200.32 square kilometre to the Orang National Park. The area to be added consists of Brahmaputra River. It also includes sandbars and islands of the river.

Why the expansion?

- Tigers and Rhinos are using the islands and sandbars that are being included. Orang region in the northern bank of Brahmaputra is essential to Kaziranga Orang Riverine Landscape. This is because animals move between the Orang and Kaziranga stretch through these lands. This stretch is 180 km. It is a corridor connecting two habitats.

Future plans for Kaziranga – Orang

- Gharials became extinct in the region six decades ago. The Assam Government is planning to reintroduce gharial here.

Significance

- The rhinos and Gangetic Dolphins are to be benefitted greatly with the addition of this extra land. It will also benefit 16 species of turtles.

About Orang

- Orang is a major rhino habitat. It became a tiger reserve in 2016. The other seven national parks in Assam are Dehing Patkai, Dibru – Saikhowa, Manas, Kaziranga, Nameri, Raimona.

Who decides on land for National Park? State or Centre?

- National Parks and Wildlife Sanctuaries are declared under the Wildlife Protection Act, 1972. On the other hand, the Biosphere reserves are declared under UNESCO Man and Biosphere Reserve Programme, 1971.

- The Wildlife Protection Act says that the area comprised within the forest as decided by the State Government is declared as the wildlife sanctuary and National Parks.

National Parks – State List or Centre List?

- The National Parks, Wild Life sanctuaries and other wildlife related subjects were moved to

Concurrent List. Earlier it was under the state list. In 1976, the 42nd constitutional amendment moved these subjects to concurrent list.

4.37 What are 'Western disturbances'?

- The India Meteorological Department (IMD) projected that; western disturbance hit the eastern states from January 11, 2022.

- Making these predictions, IMD issued yellow and orange alerts for the states of Jharkhand, Odisha, West Bengal and Bihar, for January 11 to January 13.

- Scattered to fairly widespread light or moderate rainfall is expected over these states.

- Isolated thunderstorms with lightning or hail are also predicted for Jharkhand, Bihar & Gangetic West Bengal on January 11 while for Sub-Himalayan West Bengal, Sikkim & Telangana on January 12

What is western disturbance?

- Western disturbance is an extra tropical storm originating in Mediterranean region. The disturbance brings sudden winter rain over northern parts of Indian subcontinent. It extends in east up to northern parts of Bangladesh and South eastern Nepal. It is a non-monsoonal precipitation pattern and is driven by the westerlies. Western disturbances are more frequent and stronger in the winter season.

How moisture originates?

- The moisture in such storms originates over Mediterranean Sea, Caspian Sea and Black Sea. Extra tropical storms are a global phenomenon, wherein moisture is carried in upper atmosphere. They are different than their tropical counterparts, in which moisture is carried in lower atmosphere. In Indian subcontinent, moisture is shed as rain when this storm system encounters the Himalayas.

Significance of Western Disturbances

- Western disturbances are significant for the development of Rabi crop, which includes staple wheat.

How is it formed?

- Western disturbances originate in the Mediterranean region. A high-pressure area over Ukraine and its neighbourhood consolidates. The consolidation results into intrusion of cold air from Polar Regions towards an area of warmer air with high moisture. It creates favourable conditions for cyclogenesis in upper atmosphere, leading to formation of an eastward-moving extra tropical depression. The disturbance travels at the speed of up to 12 m/s, towards the Indian subcontinent until Himalayas inhibits its development. After this, the depression rapidly weakens.

4.38 Clouded Leopard

- The Clouded leopards were spotted in a community forest in Nagaland recently. This is the first time the big cat is seen in the region. It was spotted at an altitude of 3.7 kilometers along the Indo – Myanmar border.

About the spotting

- The Clouded Leopard are locally called "Khephak". It was captured in a camera trap. The forests where the leopard was found is managed and owned by local communities of Nagaland.

Clouded Leopard: Inhabitation

- They are found in the region between foothills of Himalayas and the mainland Southeast Asia. And also, till the southeast Asian region.

Physical Characteristics

- It has irregular spots and dusky grey blotches. It hunts during night and rests on the tree during day. Its fur is dark grey in color. They have rotating ankles and sharp, powerful legs. The legs and ankle help them in climbing up fast and also hanging upside down.

Extinction

- The clouded leopard is locally extinct in Taiwan, Singapore, Vietnam and Hainan Island. It is highly threatened due to poaching and deforestation.
- Conservation Status
- IUCN: Vulnerable
- CITES: Appendix I
- United States: Endangered
- Hunting is banned in India, China, Nepal, Bangladesh, Malaysia, Taiwan, Nepal, and Vietnam. However, the ban is poorly implemented in Thailand, India and Myanmar.

Occurrence of Clouded Leopard in India States

- Arunachal Pradesh, Nagaland, Assam, Manipur, Mizoram. Tripura, subtropical forests of Meghalaya, West Bengal and Sikkim.

National Parks and Reserves

- Manas National Park, Dampa Tiger Reserve, Balpakram Baghmara landscape, Khangchendzonga Biosphere Reserve, Pakke Tiger Reserve

5. SCIENCE & TECHNOLOGY

5.1 CSIR-CDRI scientists develop OM, the RT-PCR kit for Omicron

- The CSIR – Central Drug Research Institute's scientists have developed an indigenous RT-PCR kit called 'Om' for testing the omicron variant. The kit, a first by any government institution for the omicron variant, will also make India self-reliant in RT-PCR diagnostics.

- The team comprises Dr. AtulGoel, Dr. Ashish Arora, and Dr. Niti Kumar at CSIR-CDRI. The indigenous RT-PCR kit 'INDICoV-OmTM' is one of the very few specific kits for detecting Omicron in the entire world.

About "Om"

- Om enables quick and cost-effective detection of omicron variant over genome sequencing for a large population. It was made within two months and will cost around Rs 150. Further, it will give the test results in around two hours. According to the scientists, it can also be aligned for the detection of other emerging variants of Covid infection and other respiratory infections.

- Once the kit gets approval from the Indian Council of Medical Research (ICMR), it will be launched by mid-February. The kit has been referred to the ICMR-National Institute of Virology (NIV) and is yet to be validated.

Current scenario

- The diagnostic kit will specifically detect the omicron variant which will help in the proper diagnosis and treatment of the patient. Most RT-PCR-based diagnostic kits do not confirm by which covid variant the infection is caused. Currently, the detection of omicron variant depends on tests like the S-gene dropout or by NGS (Nextgen sequencing) of the whole viral genome.

- The S-gene drop-out method is not specific and does not pinpoint the type of variant while the NGS (Nextgen sequencing) method too, has certain limitations such as expense, turnaround, and the number of centers that can provide such service.

5.2 CSIR-CSIO's UV-C technology

- The UV-C technology has been developed according to the requirements for the deactivation of the SARS COV-2 virus contained in an aerosol.

- It has been constructed with necessary ventilation measures that are needed for safety and user guidelines and tested Bio-safety standards etc. This technology deactivates viruses, bacteria, fungus and other bio – aerosols etc., with appropriate dosages using 254nm UV light.

- UV-C air duct disinfection system can be installed in auditoriums, large conference rooms, classrooms, malls etc., which provides a relatively safer environment for indoor activities in the current pandemic.

Successful Tests so far

- The UV-C Disinfection Technology has been successfully tested for 1 month in Railways coaches from Bandra to Chandigarh covering a distance of 1000 kilometres.

- In addition to this, UV-C Disinfection has also been successfully used in AC Buses of Uttar Pradesh State Road Transport Corporation (UPSRTC).

UV-C technology for safety during elections & Parliament sessions

- Union Minister Dr. Jitendra Singh informed that CSIR is planning to write to the Election Commission of India about the usage of this technology during indoor meetings with limited capacity.

- Earlier, the Election Commission permitted indoor meetings in poll-bound States with a maximum capacity of 300 people or 50 per cent capacity of the hall or auditorium, while adhering to the model code of conduct and COVID protocols during electioneering. The UV-C technology would ensure safer elections of Assembly polls in 5 States since there is also a ban on physical rallies and roadshows for a specified period of time.

- The Minister stated that he will also write to the Secretary-General of RajyaSabha for the installation of this technology ahead of the upcoming Budget Session too. A testament to its effective use can be noted from its successful installation in the Central Hall, LokSabha Chamber and Committee Rooms 62 and 63 in July 2021 ahead of the Monsoon session of Parliament.

- To ensure its wide usage Secretary, Ministry of Housing and Urban Affairs Manoj Joshi added that CPWD will work along with CSIR for wider dissemination and adoption of UV-C air duct disinfection system in Government as well as Private Buildings.

5.3   Chips to Startup (C2S) Programme

- A Cabinet committee chaired by Prime Minister Narendra Modi had initiated this program to usher in a new era in electronics manufacturing by providing a globally competitive incentive package to companies in semiconductors and display manufacturing as well as design.

- The programme aims to train 85,000 high-quality and qualified engineers in the area of very-large-scale integration (VLSI) and Embedded System Design. With the help of this training, the government intends to usher the development of 175 ASICs (Application Specific Integrated Circuits), Working Prototypes of 20 System on Chips (SoC) and IP Core repository over a period of 5 years.

- The scheme will be a significant leap in the Electronics System Design & Manufacturing (ESDM) backbone of India since, on one hand, it will inculcate the culture of SoC/ System Level Design at Bachelors, Masters and Research level, while on the other, it will act as a catalyst for the growth of Start-ups involved in the fabless design.

The scope of the C2S Programme

- The C2S programme will be executed at about 100 academic institutions/R&D organisations across India (including IITs, NITs, IIITs, Government/Private Colleges and R&D Organisations).

- The programme is also open for Startups and MSMEs, they can participate by submitting their proposals under Academia-Industry Collaborative Project, Grand Challenge/ /Hackathons/RFP for development of System/SoC/IP Core(s).

- The government has high hopes from C2S programme since its implementation will touch upon each entity of the value chain in electronics, namely, quality manpower training, research and development, hardware IPs design, System design, application-oriented R&D, Prototype design that will be deployed with the help of academia, industry, start-ups and R&D establishments – combined.

5.4 Meet the next ISRO Chief – Dr. S Somanath

- Eminent Indian aerospace engineer and rocket scientist, Dr. S Somanath has been appointed as the new chairman of the prestigious Indian Space Research Organisation(ISRO). Dr. S Somanath will replace Kailasavadivoo Sivan who will complete his extended tenure on 14th Jan 2022.

- Dr. S Somanath's contributions played a crucial role in the development of the PSLV (Polar Satellite Launch Vehicle) and GSLV (Geosynchronous Satellite Launch Vehicle) Mk-III. Also, since January 22, 2018, he was the Director of the Vikram Sarabhai Space Center (VSSC).

Things you need to know about Dr. S Somanath

- Rocket scientist – Dr. S Somanath is taking over the reins of ISRO at a crucial point as the new reforms and the upcoming space missions planned by ISRO will guide the future of Indian Space research and its position on the world platform.

- On 12th Jan, the Centre assigned Dr. S. Somanath as the Secretary of the Department of Space and the Chairman of the Space Commission. His appointment will be for a combined tenure of three years from the date of joining the post. It also includes an extension in tenure beyond the age of superannuation in the public interest.

- Dr. S Somanath is an expert in diverse disciplines. His field of expertise varies from launch vehicle design to specializing in launch vehicle systems engineering. Structural design, structural dynamics, integration designs & procedures, mechanism design, and pyrotechnics are several other areas of expertise for the new ISRO Chief.

- Born in July 1963, Dr. S Somanath completed his graduation in Mechanical Engineering from Kerala University. He was ranked second in university. He further completed his Post Graduation in Aerospace Engineering from the glorious Indian Institute of Science (IISc), Bangalore, where he was awarded a Gold Medal for his astonishing performance.

- In the early phase of his career, he led the team for the Integration of the Polar Satellite Launch Vehicle (PSLV). From there he never looked back and came a long distance. He is the recipient of the Space Gold Medal from the Astronautical Society of India (ASI), Performance Excellence Award-2014, and Team Excellence Award-2014 for GSLV Mk-III realization, from ISRO.

- ISRO has several missions and projects lined up. This includes the Gaganyaan human spaceflight mission and many others. Covid-19 has already hampered the schedule of ISRO's missions over the past two years, a challenge the new ISRO chief will face.

5.5 Advanced sea variant of BrahMos supersonic cruise missile successfully test-fired

- In yet another example of the military might of India, an advanced sea-to-sea variant of the Brah Mos supersonic cruise missile successfully test-fired from the indigenous stealth-guided missile destroyer Indian Naval Ship (INS) Visakhapatnam.

- The successful test-firing certifies the accuracy of the ship's combat system and armament complex and also validates a new capability the missile provides the Navy and the nation, the Navy said.

- INS Visakhapatnam is the first of four ingeniously designed and built Project-15B class stealth-guided missile destroyers, which was commissioned in November last year.

Air version of Brah Mos was tested from Sukhoi 30 MK-I fighter jet

- In December 2021, the air version of supersonic cruise missile 'BrahMos' was successfully test-fired from the supersonic fighter jet Sukhoi 30 MK-I from Integrated Test Range, Chandipur in Odisha.

- The missile launched from Sukhoi 30 MK-I followed the pre-planned trajectory, meeting all targeted objectives.

Major milestone in BrahMos development

- The launch of BrahMos supersonic cruise missile is a major achievement in the BrahMos development as the development has cleared the system for the serial production of air-version Brah Mos missiles within India.

- Notably, major airframe assemblies which comprise an integral part of the Ramjet Engine are indigenously developed by Indian Industry. These integral parts include metallic and non-metallic air frame sections consisting Ramjet fuel tank and pneumatic fuel supply system. During the test, the structural integrity and functional performance have been proven.

Understanding BrahMos Supersonic Cruise Missile

- An amalgamation of the names of Brahmaputra river and Moskva rivers, BrahMos missiles are designed, developed, and produced by BrahMos Aerospace, a joint venture company set up by the Defence Research and Development Organisation (DRDO) and Mashinostroyenia of Russia.

- Multiple versions of the supersonic cruise missile, including those which can be fired from land, warships, submarines, and Sukhoi-30 fighter jets have already been developed and successfully

tested earlier. The ship-launched version of BrahMos and land-based system are in service of the Indian Navy and the Indian Army since 2005 and 2007 respectively.

- Later, the air-launched version Brahmos was successfully flight-tested for the first time from the IAF frontline fighter aircraft Sukhoi-30MKI against a sea-based target in the Bay of Bengal in November 22, 2017.

- The BrahMos is a medium-range supersonic missile that can be launched from submarines, ships, aircraft, or land-based platforms. It is considered to be the fastest supersonic missile in the world that can achieve a speed 2.8 times the speed of sound.

- The land-attack version of BrahMos has the capability of cruising at 2.8 Mach speed and with the upgraded capability, the missile can hit targets at a range of upto 400 kilometers with precision. Advanced versions of the range above 1,000 kilometers and speed upto 5 Mach are said to be under development.

5.6 Visually challenged students to access Braille maps using advanced technology

- The Ministry of Science & Technology has come up with a user-friendly solution for visually challenged students. They would soon have access to Braille Maps, designed and developed using the Digital Embossing Technology.

- These braille maps will be highly durable, easy to use, and will be of great help to persons-with-visual-challenge in the long run.

Digital Embossing Technology

- Digital Embossing Technology eliminates the need for printing plates, moulds, chemicals, and solvents, thus emitting no pollutants or waste and reducing the overall energy usage. The technology has been introduced, designed and implemented first time in India by National Atlas & Thematic Mapping Organisation (NATMO).

- Digital Embossing Technology can produce braille maps that can be used by more people for years. The benefit of using the technology over the earlier ones is that the embossing technology not only has high production speed but is more durable and readable.

Government's initiatives

- This is not the first time that such an initiative has been taken. The Government of India has been taking major initiatives, especially in the education sector for visually impaired students. The Government has launched the Indian Sign Language Dictionary (audio and text embedded sign language video for the hearing impaired) and Talking Books (audiobooks for the visually impaired) so that education does not get hampered.

- In 2019, to aid persons-with-visual-challenge, Prime Minister Narendra Modi had launched a new series of visually impaired friendly circulation coins (Rs.1, Rs.2, Rs.5, Rs.10, and Rs.20). Similarly, the Department of Empowerment of Persons with Disabilities (DEPwD) had issued "Comprehensive Disability Inclusive Guidelines" to States and Union territories for the protection and safety of Persons with Disabilities (Divyangjan) in light of Pandemic Covid-19 (Corona Virus).
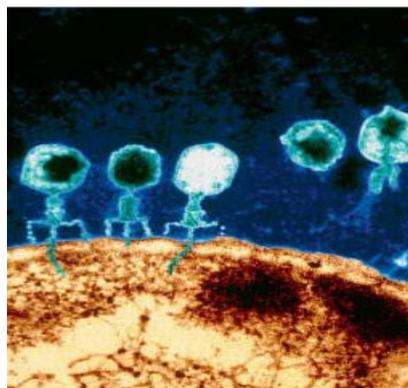
5.7 First pig heart transplant

- For the first time, a human has been given a transplant of a pig's heart. David Bennett, 57, had the operation in Baltimore, Maryland, on 7 January using a heart that had been genetically modified to boost the chances of acceptance in a human body.

- The donated heart came from a pig developed by US firm Revivicor. In total, the animal had 10 genes modified. Four of those were inactivated, including one that causes an aggressive immune response and one that would otherwise cause the pig's heart to continue growing after transplant into a human body.

- Transplants from other animals, a procedure known as xenotransplantation, have long been seen as a way to save the lives of the thousands of people who die each year while waiting for a donated organ. The chief concern is whether our immune systems will accept such transplants, as organ rejection can happen even when human donors and recipients are carefully immunologically matched. Many research groups have been trying for years to modify animals so their organs provoke less of an immune reaction, and they have had success transplanting them into primates such as baboons.

- Bennett was approved to have the risky procedure as he was too sick to go on the waiting list to get a human heart. If he is successfully taken off the bypass machine and continues to stay well, it could open the door to such transplants for a growing pool of people. It could also lead to pig-to-human transplants of kidneys, livers and lungs in future.

- There have been fears that virus genes naturally found in pig DNA could cross into humans, but these have faded after successful transplants of pig pancreas cells into people with diabetes. No such problems have arisen with transplants of whole pig organs into primates either.

- If this procedure succeeds, providing the organs to offer it more widely in future shouldn't be a major obstacle. Pigs have about eight piglets in each litter and can start breeding before they are a year old, although they would need to be farmed in special hygienic conditions.

5.8 Bacteriophages (Bacteria-killing viruses)

- Bacteria-killing viruses, called bacteriophages, are increasingly being used to destroy harmful microbes during food processing, to stop food rotting and to treat plant and animal diseases on farms.

- One big advantage of this approach is that phages can kill bacteria that have become resistant to antibiotics or disinfectants.

- Bacteriophages are already everywhere. There are an estimated 10^{31} phages on Earth, more than every other kind of biological entity combined. Your gut alone is thought to hold 10^{15}. Given their multitudes, it is no surprise people have wanted to put them to work. Phages have been used to treat human infections since the 1920s.

- It is much easier to prescribe antibiotics than to find a phage capable of killing the specific bacterium infecting a person.

- When it comes to food, it is a different matter. Phages are increasingly being used in some countries to kill bacteria that cause food poisoning. The main targets are salmonella, shigella and the O157:H7 strain of E. coli, in addition to L. monocytogenes.

- These bacteria can lurk on fresh foods such as salads and can also contaminate the surface of foods after cooking. There is no perfect way to get rid of them. For instance, ionising radiation is extremely effective, but it can alter the taste, texture and look of food.

- When using phages, the usual approach is to spray a fine mist containing them over food. This can be highly effective at killing unwanted bacteria. Numerous studies show that it can reduce bacterial numbers by orders of magnitude and sometimes even to the point of undetectability.

- Other advantages are that phages leave no perceptible traces and have no effects on people, packaging or machinery, unlike some of the chemical alternatives used for disinfecting foods. Treated foods don't have to be labelled, as all fresh foods already contain phages, so packaging can remain unchanged.

- However, the approach has its drawbacks too. The main issue is that each phage targets only one specific bacterial strain, so a mixture of phages is required to kill all the strains that might be present. This means a cocktail that proves potent in the US, say, might not work in other countries.

- And because bacteria are always evolving, the effectiveness of each phage needs to be constantly monitored and the mixture tweaked as necessary because phage sprays don't usually kill all bacteria, their populations can regrow over time, especially if food isn't stored properly. Other issues include chemicals in or on foods killing the phages, or the spray not coating every surface.

- Additional challenge is storage, as phages need to be kept cold, but a team in Canada has developed a way of turning phages into dry powders that don't need refrigeration.

- Extending shelf life would not only benefit producers and consumers, but also help save biodiversity and limit carbon emissions by reducing food waste.

- Food production is a major cause of emissions and habitat loss.

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